MZ-E55

SERVICE MANUAL

Ver 1.0 1998.10

E Model
Tourist Model

US and foreign patents licensed from Dolby Laboratories Licensing Corporation

Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MT-MZE55-150
Optical Pick-up Mechanism Type	ODX-1A/1B

SPECIFICATIONS

MD Section

Audio playing system
Minidisc digital audio system
Laser diode properties
Material : GaAlAs
Wavelength : λ =790nm
Emission duration : continuous
Laser output : less than 44.6 μW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7mm aperture.
Revolutions
400 rpm to 900 rpm (CLV)
Error correction
Advanced Cross Interleave Reed Solomon Code (ACIRC)
Sampling frequency
44.1kHz
Coding
Adaptive Transform Acoustic Coding (ATRAC)
Modulation system
EFM (Eight to Fourteen Modulation)
Number of channels
2 stereo channels
1 monaural channel
Frequency response
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Outputs
Headphones : stereo mini-jack, maximum output level 5mW+5mW, load impedance 16 ohm

General

Power requirements
Rechageable battery (supplied)
Nickel metal hydride rechargeable battery NH-9WM (N)
One LR6 (size AA) alkaline battery (not supplied)
Sony AC Power Adaptor (not supplied) connected at the DC IN 1.5V jack
Battery operation time

Batteries	Playback
Nickel metal hydride Rechargeable battery (NH-9WM (N))	Approx. 7.5 hours
One LR6 (size AA) Sony alkaline dry batteries	Approx. 10 hours
Nickel metal hydride (NH-9WM (N)) + One LR6 (size AA)	Approx. 20 hours

Dimensions
Approx. 79.7 x 14.9 x 71.9 mm (w/h/d)
(3 1/4 x 19/32 x 2 7/8 in) not including projecting parts and controls
Mass
Approx. 80 g (2.9 oz.) the player only
Approx. 120 g (4.3 oz.) incl. a premastered MD and a nickel metal hydride rechargeable battery NH-9WM (N)
Supplied accessories
Battery charger (1)
Rechargeable battery (1)
Rechargeable battery carrying case (1)
Headphones with a remote control (1)
Dry battery case (1)
Carrying pouch (1)
Plug adaptor (1) (Tourist model)

Design and specifications are subject to change without notice.

PORTABLE MINIDISC PLAYER

MICROFILM

SONY®

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CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Mini Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

"MD WALKMAN" is a trademark of Sony Corporation.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

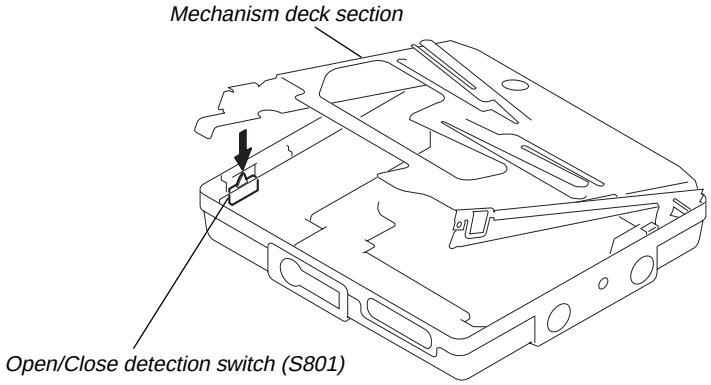
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

SECTION 1
SERVICING NOTE

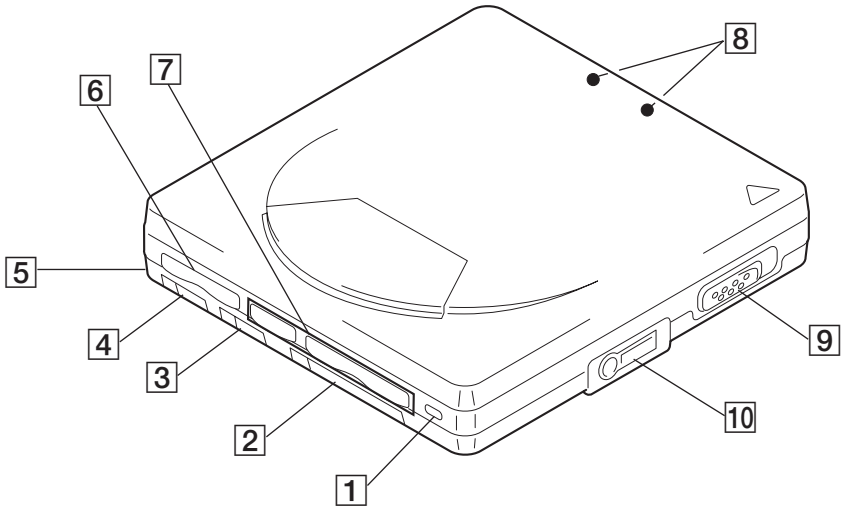
When repairing this device with the power on, if you remove the main board, this device stops working.
In this case, you work without the device stopping by fastening the hook of the Open/Close detection switch (S801).



SECTION 2
GENERAL

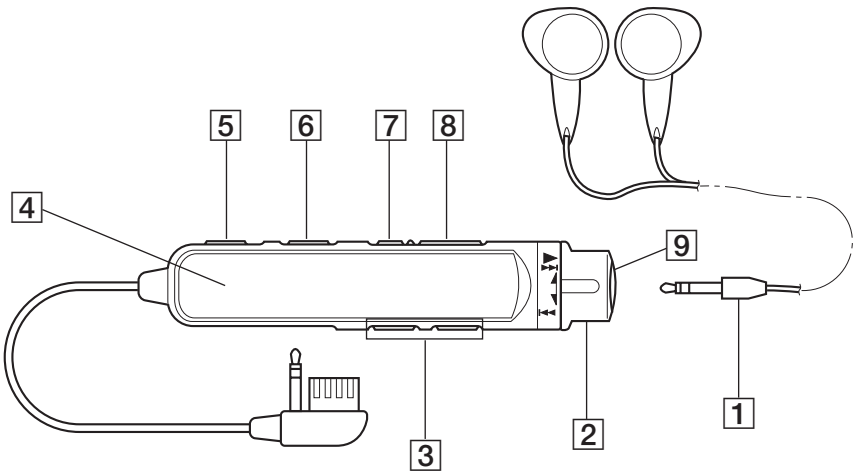
LOCATION AND FUNCTION OF CONTROLS

Main Unit



1 OPERATE lamp
2 HOLD switch
3 DIGITAL MEGA BASS switch
4 AVLS switch
5 Battery compartment
6 VOLUME +/– buttons
7 MD operate buttons
▶▶I ▶ (FF • PLAY)
I◀◀ (REW)
■ (STOP)
8 External battery terminal (+/–)
9 OPEN knob
10 🎧 / REMOTE jack

Headphones with Remote Control



1 Headphones
2 MD operate switch and buttons
▶ • ▶▶I (PLAY • FF)
I◀◀ (REW)
■ (STOP)
3 VOL +/– button
4 Display window
5 DISPLAY button
6 PLAYMODE button
7 ❚❚ (PAUSE) button
8 HOLD ➞ switch
9 ■ (STOP) button

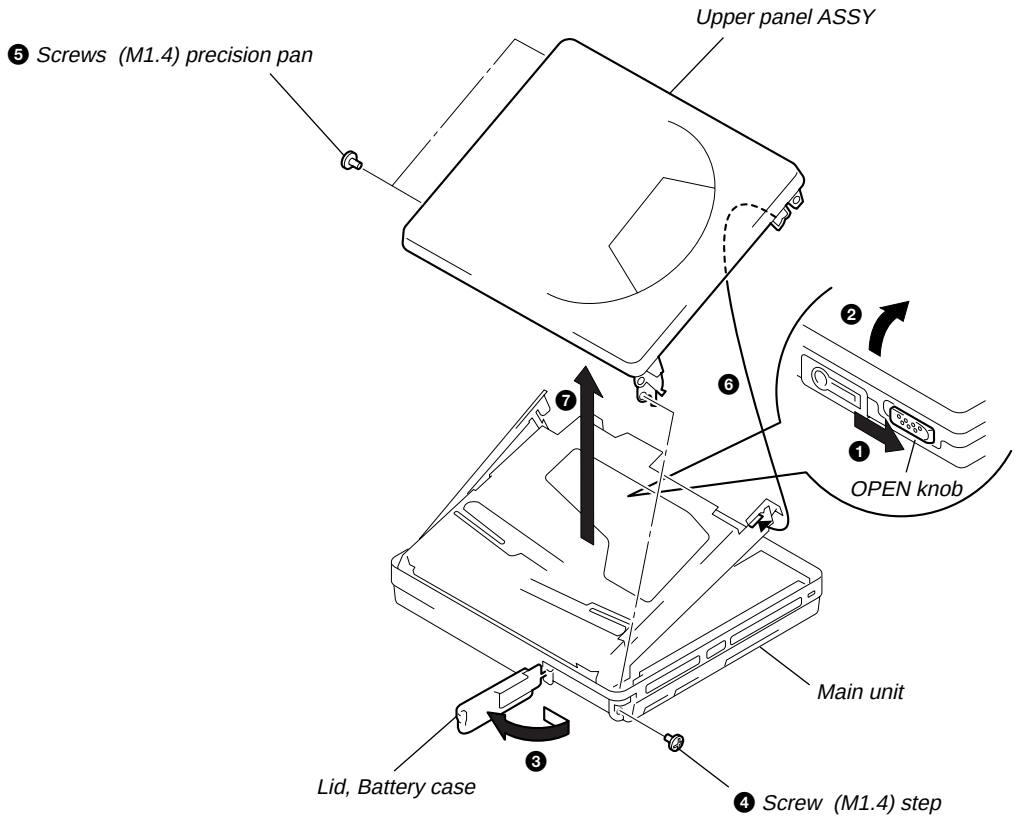
SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

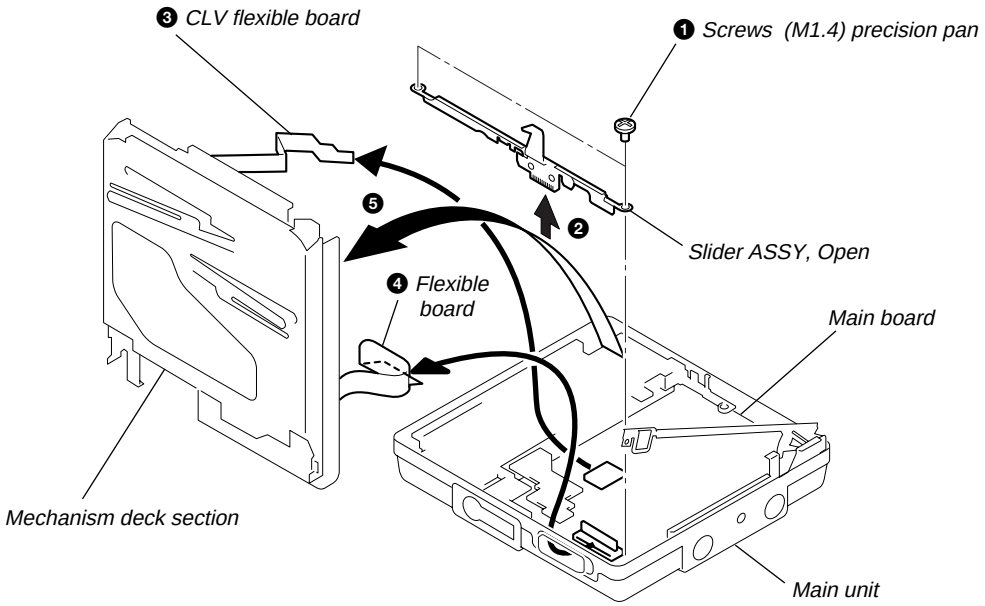
set → Upper panel ASSY → Mechanism deck section → Main board, Audio board → Switch board
Optical pick-up block ASSY

Note : Follow the disassembly procedure in the numerical order given.

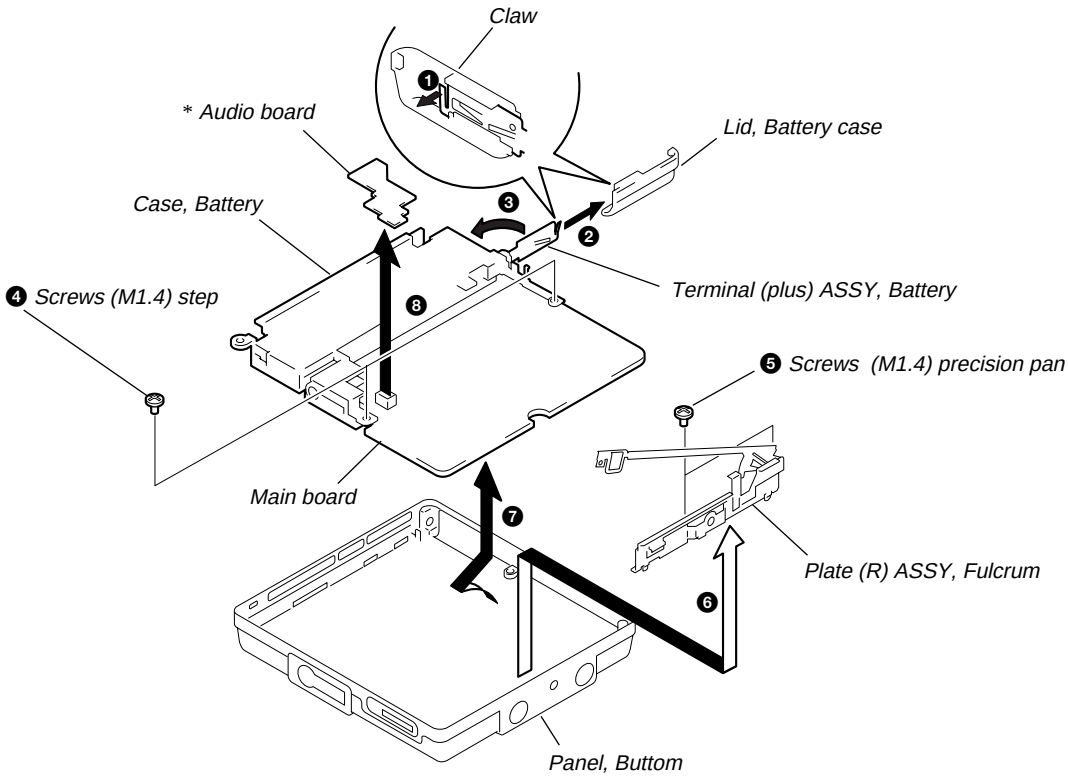
3-1. UPPER PANEL ASSY



3-2. MECHANISM DECK SECTION

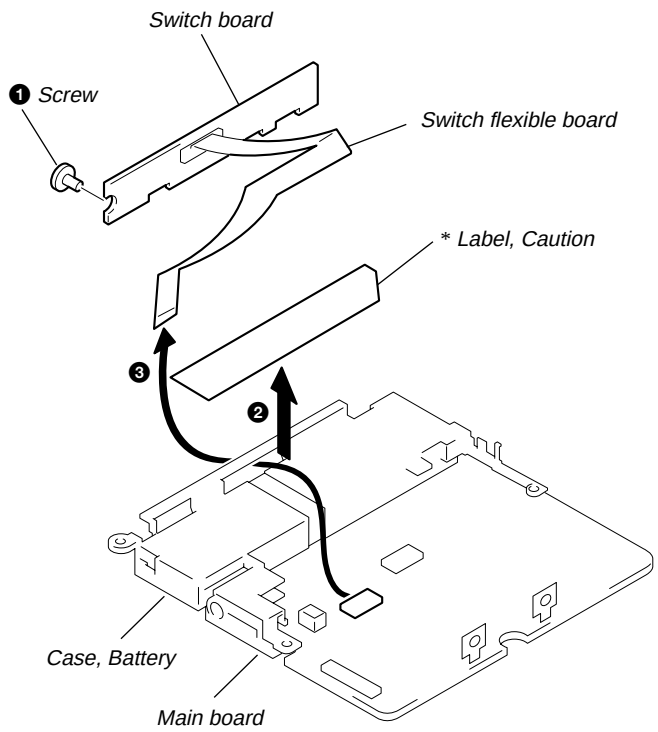


3-3. MAIN BOARD, AUDIO BOARD



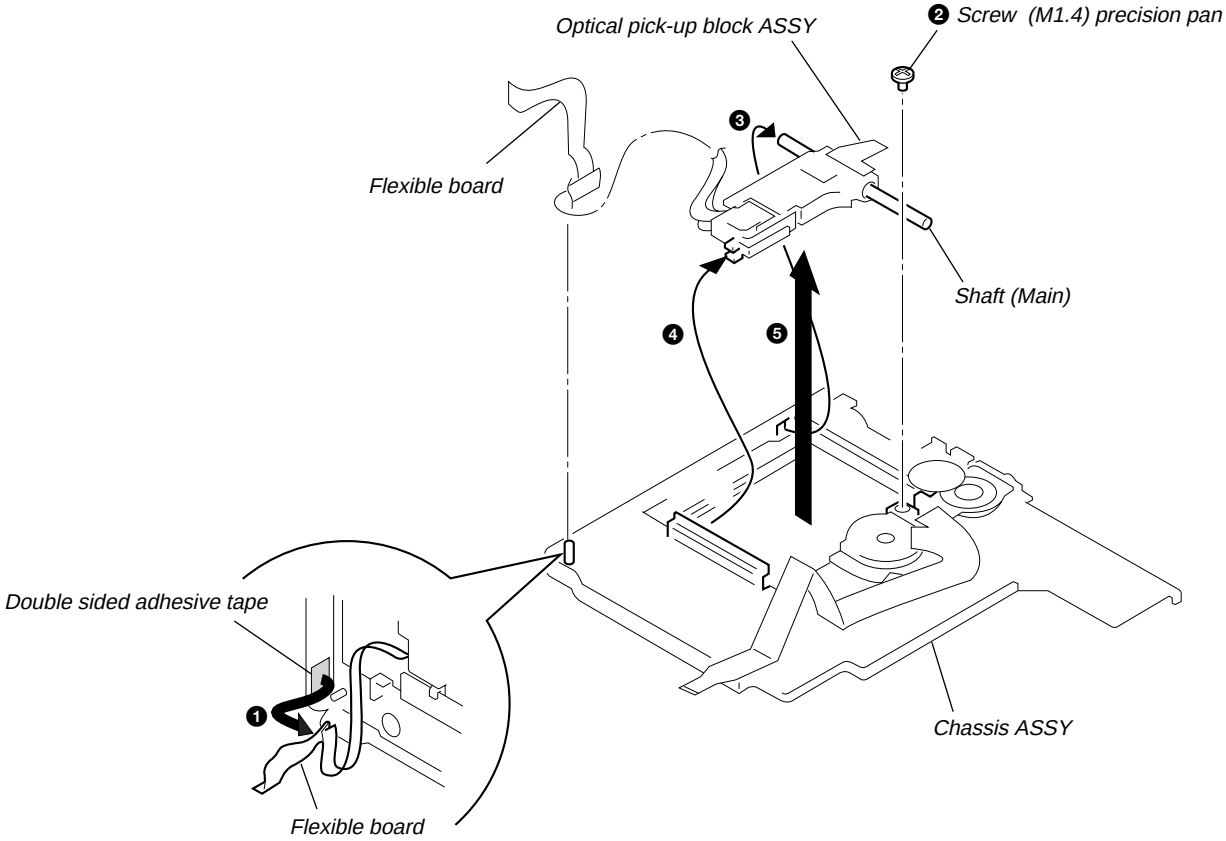
* **NOTE :**
When removing the audio board, lift up on the board so that the connector separates vertically.

3-4. SWITCH BOARD



* **NOTE :**
The caution label (4-213-092-01) affixed to the switch-flexible board will be damaged or deformed when the switch board or the switch-flexible board is removed so replace it with a new caution label.

3-5. OPTICAL PICK-UP BLOCK ASSY



SECTION 4
TEST MODE

Outline

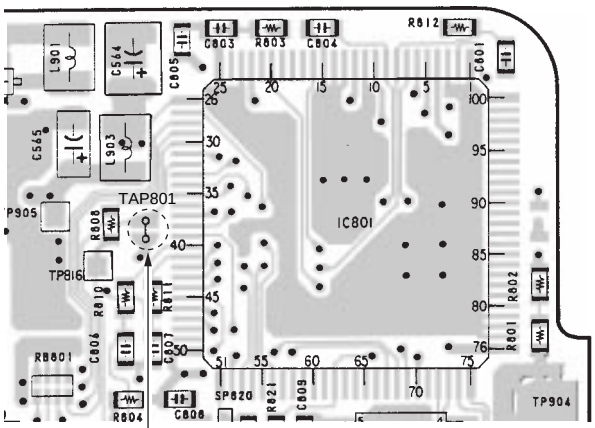
- In this set, overall adjustment mode is made available by entering test mode to perform automatic adjustment of CD and MO. In the overall adjustment mode, the disc is determined whether it is CD or MO and adjustments are performed in sequence. If a fault is found, the location of the fault is displayed. Also, in servo mode, each adjustment can be automatically made.
- Operation in the test mode is performed with the Remote Commander. A key having no particular description in the text, indicates a Remote Commander key.

Setting the Test Mode

To enter the test mode, two methods are available :

1. Entering method with key input.
   Turn on the HOLD switch on the set. While holding down the ■ key on the set, press the following remote commander keys in the following order :
   ▶▶I → ▶▶I → I◀◀ → I◀◀ → ▶▶I → I◀◀ → ▶▶I → I◀◀ → II → II
2. Entering method by shorting the test point
   Solder bridge the test point TAP801 (TEST) on the main board (connect IC801 pin ㉜ to GND), and turn on the POWER.

[MAIN BOARD] (Conductor side)



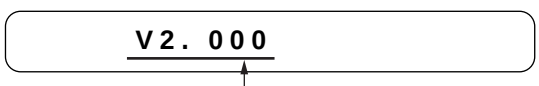
Test mode
(Short : Test mode
Open : Normal mode)

Releasing the Test Mode

1. When test mode was entered with key input, turn off the POWER.
2. When test mode was entered by shorting the test point, turn off the POWER and open the solder bridge of TAP801 (TEST MODE) on the main board.

Operation of Setting on Test Mode

When the test mode is set, the LCD displays the following :



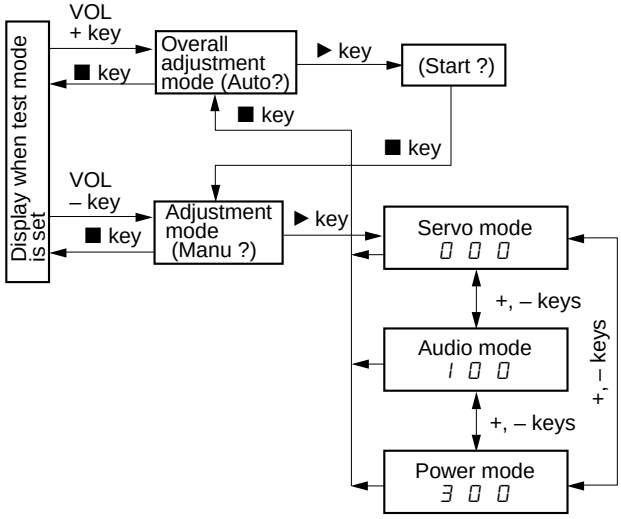
ROM version display

LCD on remote commander

- The cycle - the above ROM version display → All lit → All off - is repeated.
  (The ROM version is constantly displayed.)
- When the PLAY MODE key is pressed and hold down, the display at that time is held so that display can be checked.

Configuration of Test Mode

The test mode has the configuration given below.

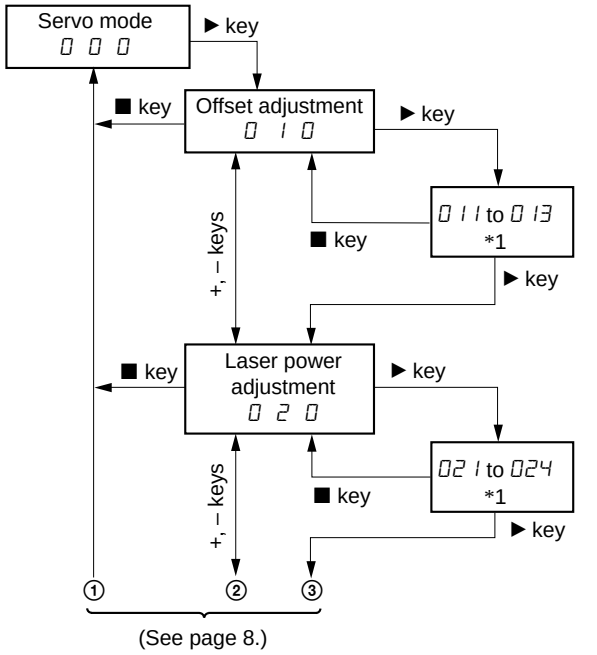


Displays of the LCD on the remote commander are shown in parentheses.

Servo Mode

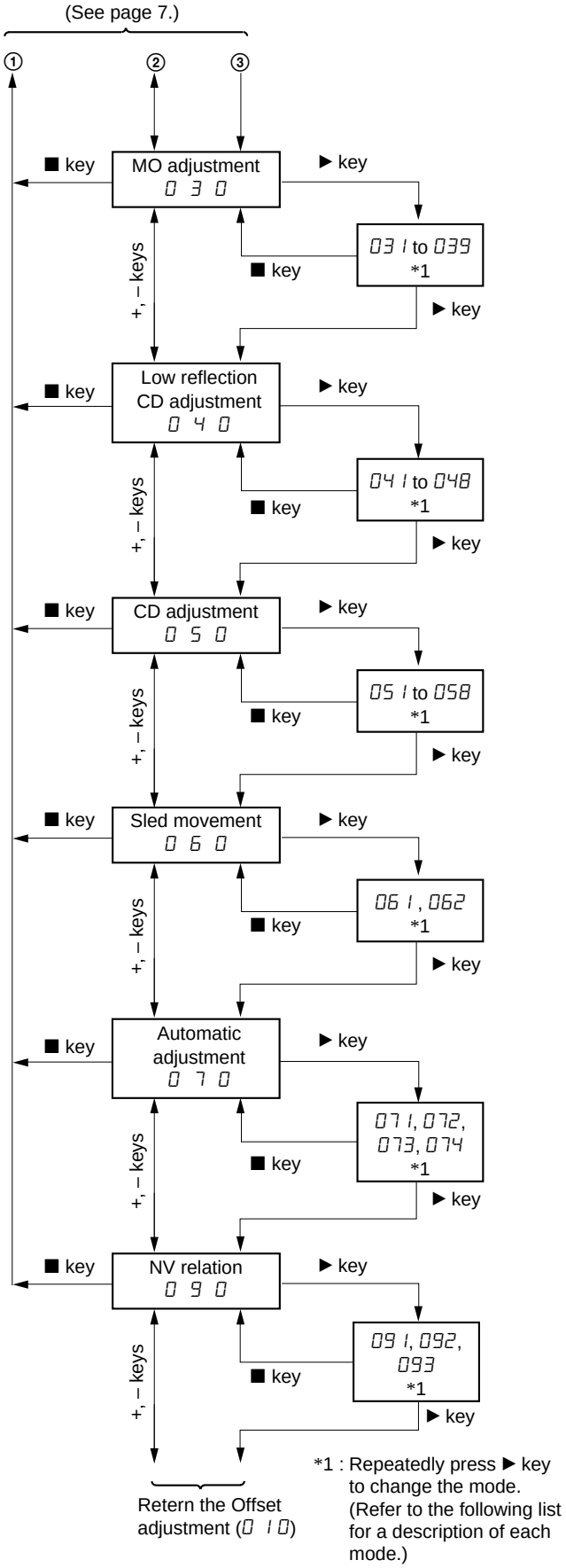
- Set the test mode, press the VOLUME – key and use the ▶ key to set the servo mode.
- When the servo mode is set, use the ▶▶I key and the I◀◀ key to move the optical pick-up to the outer circumference and to the inner circumference respectively.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Servo Mode



(See page 8.)

*1 Repeatedly press ▶ key to change the mode. (Refer to the following list for a description of each mode.)



2. Description of Each Mode

0 10 Offset adjustment

Mode	Description
011	FE offset
012	TE offset
013	All servo ON

020 Laser power adjustment

Mode	Description
021	MO power A
022	MO power E
023	CDL power
024	CD power

030 MO adjustment

Mode	Description
031	MO EF balance
032	MO EF gain
033	MO ABCD gain
034	MO focus gain
035	MO tracking gain
036	MO RF gain
037	MO ADIP gain
038	MO focus bias E
039	CD focus bias A

040 Lower reflection CD adjustment

Mode	Description
041	Lower reflection CD EF balance
042	Lower reflection CD EF gain
043	Lower reflection CD ABCD gain
044	Lower reflection CD focus gain
045	Lower reflection CD tracking gain
046	Lower reflection CD RF offset
047	Lower reflection CD RF gain
048	Lower reflection CD focus bias

050 CD adjustment

Mode	Description
051	CD EF balance
052	CD EF gain
053	CD ABCD gain
054	CD focus gain
055	CD tracking gain
056	CD RF offset
057	CD RF gain
058	CD focus bias

060 Sled movement

Mode	Description
061	Sled in
062	Sled out 5

070 Automatic adjustment

Mode	Description
071	Focus search
072	Access 32
073	ADER check
074	Tracking sensitivity adjust

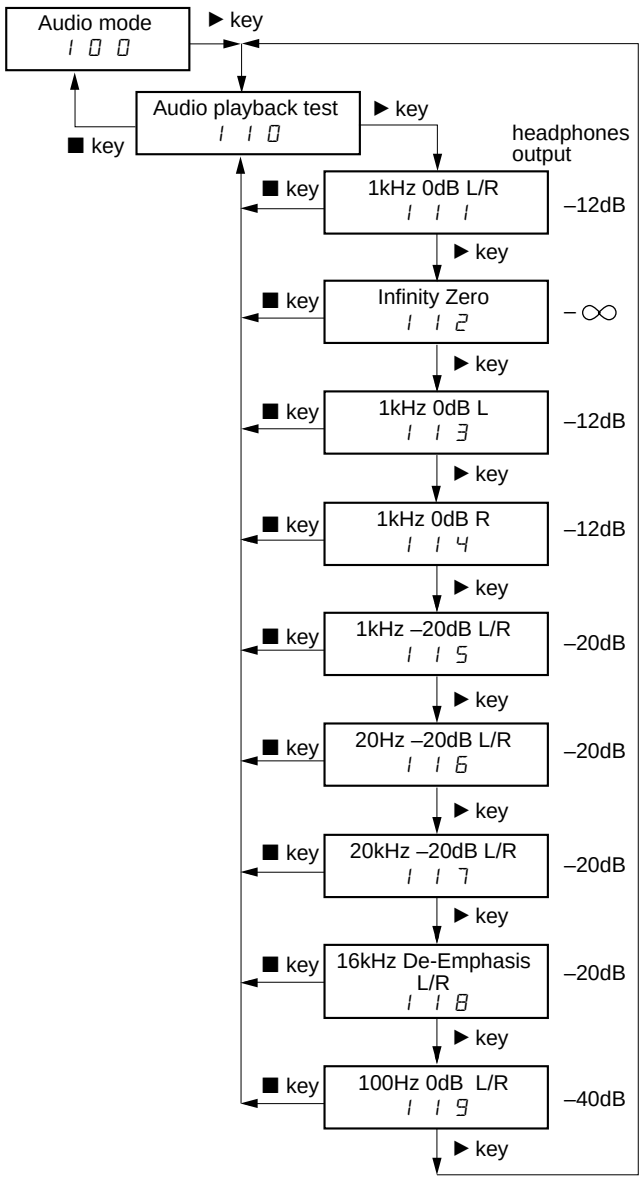
090 NV relation

Mode	Description
091	NV clear
092	Power OFF
093	Function code change

Audio Mode

- Enter the test mode and press the VOLUME – key. Then, press the ► key and the VOLUME + key in this turn to enter audio mode.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Audio Mode

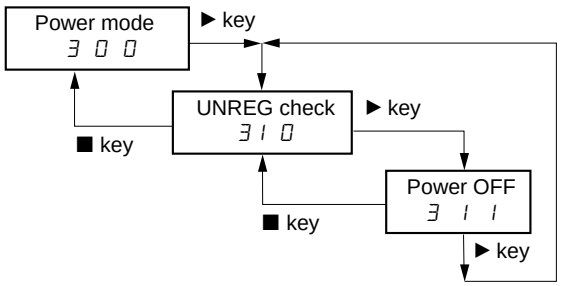


- The mode No. 111 is for S/N and crosstalk. The mode No. 115 is for distortion factor and frequency characteristics.
- When the VOLUME +/– keys is pressed in any mode, the volume of the headphones is changed (increased/decreased) in units of one step. When the ►►I / I◄◄ keys is pressed, the volume of the headphones is maximized/minimized.
- For the volume value, any changed value remains as it is basically.
  However, when the volume is switched from 114 to 115 or 118 to 119, it returns the default value.

Power Mode

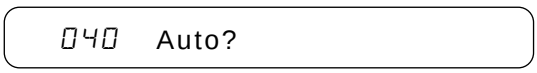
- Enter the test mode and press the VOLUME – key. Then, press the ► key and the VOLUME – key in this turn to enter power mode.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Power Mode

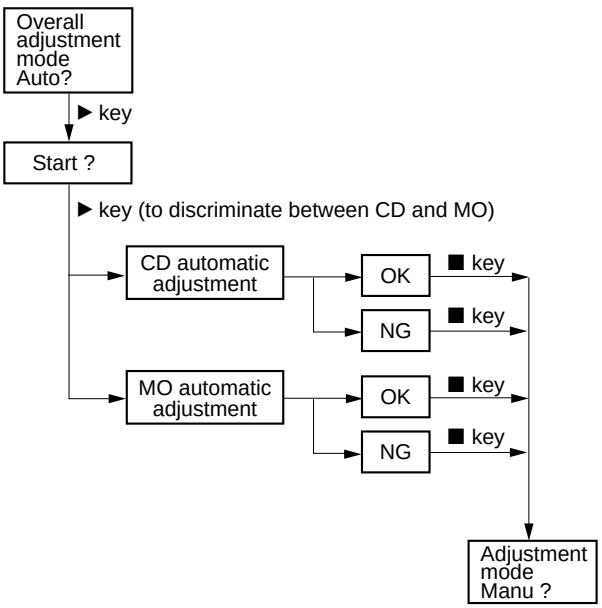


Overall Adjustment Mode

- Enter the test mode and press the VOLUME + key to enter overall adjustment mode.
- When entering another mode, refer to the configuration of test mode.
- When the overall adjustment mode is entered, the LCD on the remote commander display the following :



1. Structure of Overall Adjustment Mode



SECTION 5
ELECTRICAL ADJUSTMENTS

Notes for Adjustment

- In this set, automatic adjustment of CD and MO can be performed by entering the test mode.
- Adjustments are performed in the overall adjustment mode. If an item is determined as NG, the item is readjusted in servo mode.

Adjustment Method in Overall Adjustment Mode

1. Enter the test mode and press the VOLUME + key to enter overall adjustment mode.
2. Insert the CD test disc (TGYS-1) or SONY MO disc (recorded) commercially available.
3. Press the ► key twice. The disc is determined whether it is CD or MO and each adjustment mode is set. Automatic adjustments are performed in the order of the items listed below.

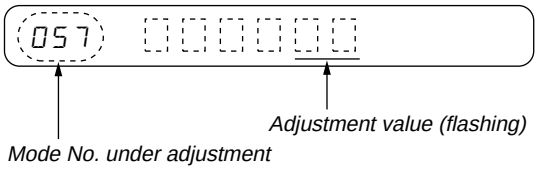
- In CD Automatic adjustment Mode

No.	Mode	Description
1	061	Sled in
2	071	Focus search
3	062	Sled out 5
4	051	CD EF balance
5	052	CD EF gain
6	051	CD EF balance
7	053	CD ABCD gain
8	054	CD focus gain
9	055	CD tracking gain
10	056	CD RF offset
11	057	CD RF gain
12	056	CD RF offset
13	058	CD Focus bias

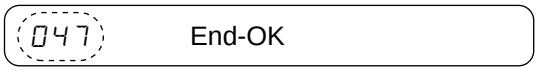
- In MO Automatic adjustment Mode

No.	Mode	Description
1	061	Sled in
2	011	FE offset
3	012	TE offset
4	071	Focus search
5	062	Sled out
6	031	MO EF balance
7	032	MO EF gain
8	031	MO EF balance
9	033	MO ABCD gain
10	034	MO focus gain
11	035	MO tracking gain
12	036	MO RF gain
13	037	MO ADIP gain
14	039	MO focus bias A
15	073	ADER check
16	071	Focus search
17	031	MO EF balance
18	032	MO EF gain
19	031	MO EF balance
20	033	MO ABCD gain
21	034	MO focus gain
22	035	MO tracking gain
23	036	MO RF gain
24	037	MO ADIP gain
25	039	MO focus bias A
26	073	ADER check
27	061	Sled in
28	071	Focus search
29	041	Low reflection CD EF balance
30	042	Low reflection CD EF gain
31	041	Low reflection CD EF balance
32	043	Low reflection CD ABCD gain
33	044	Low reflection CD focus gain
34	045	Low reflection CD tracking gain
35	046	Low reflection CD RF offset
36	047	Low reflection CD RF gain
37	061	Sled in
38	071	Focus search
39	041	Low reflection CD EF balance
40	042	Low reflection CD EF gain
41	041	Low reflection CD EF balance
42	043	Low reflection CD ABCD gain
43	044	Low reflection CD focus gain
44	045	Low reflection CD tracking gain
45	046	Low reflection CD RF offset
46	047	Low reflection CD RF gain

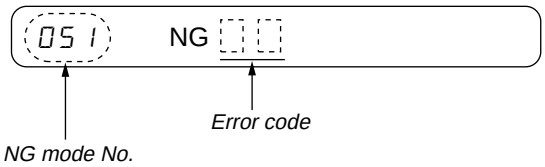
* Remote commander display during automatic adjustment



4. If result of automatic adjustment is OK, the following display appears.



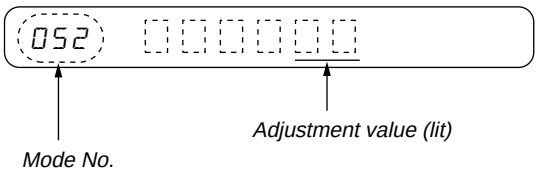
5. If result of automatic adjustment is NG, the following display appears.



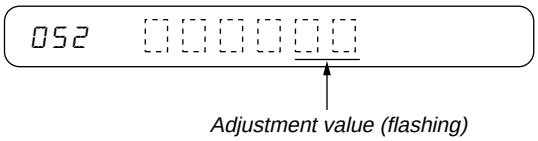
* If NG, enter servo mode to perform automatic adjustment of the item determined as NG.

Adjustment in Servo Mode Method

1. When each adjustment mode is set according to the structure of servo mode, the lower two digits of the mode No. and the adjustment value written in EEPROM are displayed and lit on the LCD on the remote commander.

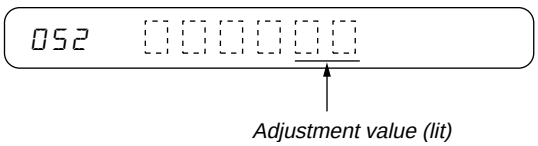


2. When the ▮▮ key is pressed, the following display appears and the automatic adjustment is performed.



Note) Although the VOLUME +/– keys can be used to change the adjustment value to any value, they should not be used whenever possible.

3. When the automatic adjustment is completed, the flashing adjustment value is lit.



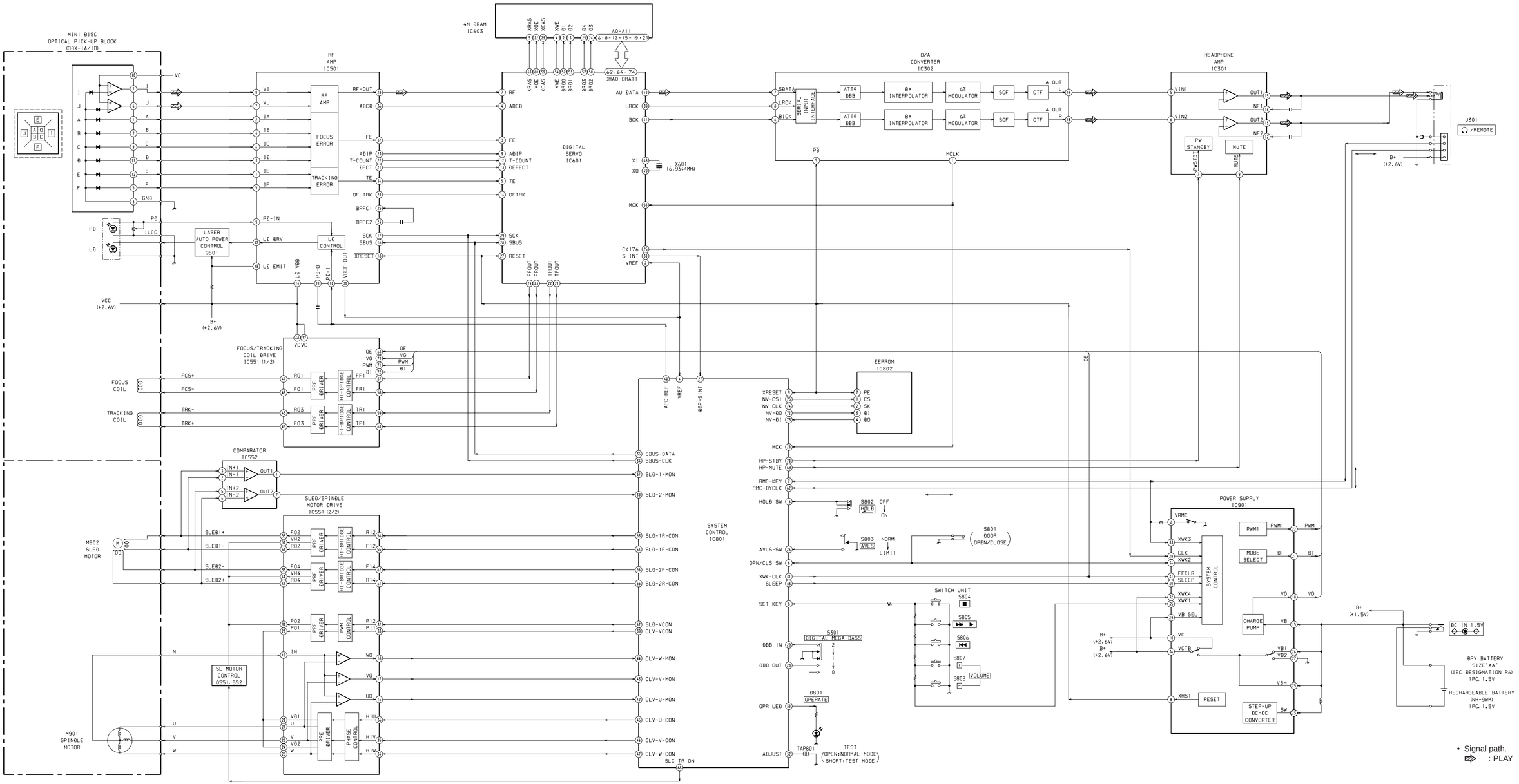
SECTION 6
DIAGRAMS

6-1. EXPLANATION OF IC TERMINALS

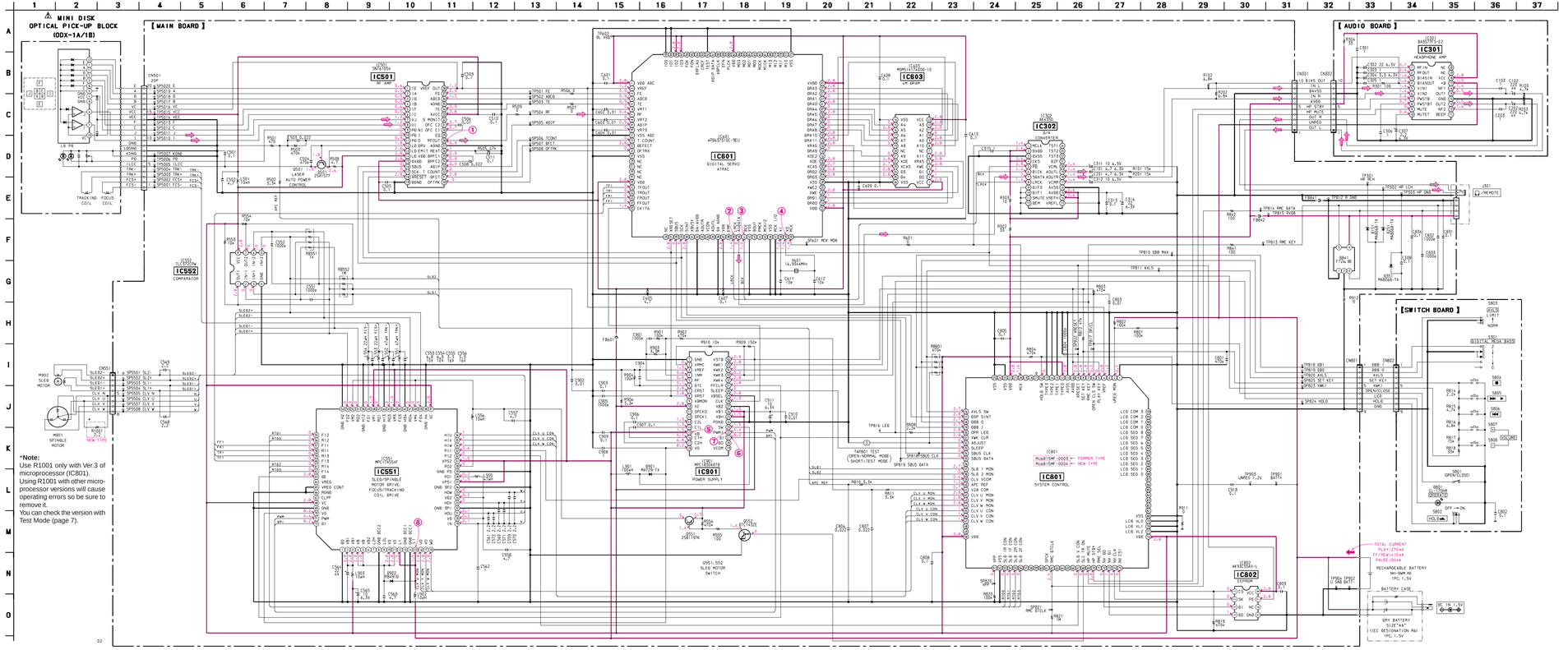
IC801 RU6815MF-0003 (FORMER TYPE), RU6815MF-0004 (NEW TYPE) (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1		–	Not used (Fixed at “L”).
2	UREG MON	I	Unreg voltage monitor input.
3		–	Not used (Fixed at “L”).
4	VREF	I	Reference voltage for power supply voltage adjustlment.
5	PLAY KEY	I	Set PLAY key input.
6	OPEN/CLS SW	I	OPEN/CLOSE switch input. L : Close
7	RMC KEY	I	Remote commander key input.
8	SET KEY	I	Set key input.
9	XRESET	I	Systen reset input (At reset : “L”).
10	AVDD	–	A/D converter power supply (+2.6V or +2.8V).
11	AVSS	–	A/D converter Ground.
12	TYPE 0	I	Model discrimination terminal (Fixed at “H”).
13	TYPE 1	I	Model discrimination terminal (Fixed at “L”).
14	TYPE 2	I	Model discrimination terminal (Fixed at “L”).
15	TYPE 3	I	Model discrimination terminal (Fixed at “L”).
16	HOLD SW	I	Set HOLD switch input.
17	VREG CON	O	2.5V voltage on/off switch (Sub terminal) (not used).
18		–	Not used (Open).
19		–	Not used (Open).
20	MCK	I	Master clock input.
21		–	Not used (Open).
22	VDD	–	Digital power supply (+2.6V or +2.8V).
23	VSS	–	Digital Ground.
24		–	Not used (Open).
25	VSS	–	Digital Ground.
26	AVLS SW	I	Set AVLS switch input.
27	DSP SINT	I	Interrupt input from DSP.
28	DBB 0	I	DIGITAL MEGA BASS switch input (MID).
29	DBB 1	I	DIGITAL MEGA BASS switch input (MAX).
30	OPR LED	O	LED drive output.
31	XWK CLR	O	Power IC wakeup factor latch clear output and motor driver IC control signal outpt.
32	ADJUST	I	“Normally, Test mode select input (“L” : Test mode)
33	SLEEP	O	Power supply circuit OFF signal output.
34	SBUS CLK	O	SBB serial clock output.
35	SBUS DATA	O	SBB serial data output.
36		–	Not used (Open).
37	SLD 1 MON	I	Sled servo timing signal input.
38	SLD 2 MON	I	Sled servo timing signal input.
39	CLV VCON	O	Spindle servo drive voltage control output.
40	APC REF	O	Laser power control output.
41	V28-CON	O	Power voltage (+2.6V or +2.8V) correction control output.
42	CLV U MON	I	Spindle servo timing signal input.
43	CLV V MON	I	Spindle servo timing signal input.
44	CLV W MON	I	Spindle servo timing signal input.
45	CLV U CON	O	Spindle servo drive signal output.
46	CLV V CON	O	Spindle servo drive signal output.
47	CLV W CON	O	Spindle servo drive signal output.

Pin No.	Pin Name	I/O	Pin Description
48		–	Not used (Open).
49		–	Not used (Open).
50	VDD	–	Digital power supply (+2.6V or +2.8V).
51	VPP	–	Power for on board light.
52	VSS	–	Digital ground.
53	SLD 1R CON	O	Sled motor control signal output.
54	SLD 1F CON	O	Sled motor control signal output.
55	SLD 2R CON	O	Sled motor control signal output.
56	SLD 2F CON	O	Sled motor control signal output.
57		–	Not used (Open).
58		–	Not used (Open).
59		–	Not used (Open).
60		–	Not used (Open).
61	SPCK	O	Serial clock output for Remote control communication. Not used (Open).
62	RMC DTCLK	I/O	Serial data input/output for Remote control communication.
63 – 66		–	Not used (Open).
67	SLD V CON	O	Sled servo outer voltage control output.
68	SLC TR ON	O	Baypass transistor control output for sled drive power supply.
69	HP MUTE	O	Headphone amplifier mute output.
70	HP STBY	O	Headphone amplifier standby output.
71	RMC SEL	O	TSB/SSB selection signal output to remote commander terminal. Not used (Open).
72	NV D0	O	Serial data signal output for NVRAM.
73	NV D1	I	Serial data signal input from NVRAM.
74	NV CLK	O	Serial clock signal output for NVRAM.
75	NV CS1	O	Chip select signal output for NVRAM.
76	VDD	–	Digital power supply (+2.6V or +2.8V).
77 – 79	LCD VL2 – 0	I	LCD drive level power supply (Connected ground).
80	VSS	–	Digital ground.
81 – 87		–	Not used (Open).
88 – 96	LCD SEG0 – 8	–	LCD Segment terminal. Not used (Open).
97 – 100	LCD COM0 – 3	–	LCD common terminal. Not used (Open).


MINI DISC
OPTICAL PICK-UP BLOCK
(DDX-1A/1B)
4M DRAM
IC605
RF
AMP
IC501
D/A
CONVERTER
IC302
HEADPHONE
AMP
IC301
DIGITAL
SERVO
IC601
X601
16.9344MHz
LASER
AUTO POWER
CONTROL
Q501
LD
CONTROL
FOCUS/TRACKING
COIL DRIVE
IC551 (1/2)
FOCUS
COIL
TRACKING
COIL
COMPARATOR
IC552
SLED/SPINDLE
MOTOR DRIVE
IC551 (2/2)
M902
SLED
MOTOR
M901
SPINDLE
MOTOR
SL MOTOR
CONTROL
Q551, 552
SYSTEM
CONTROL
IC801
EEPROM
IC802
SWITCH UNIT
S804
S805
S806
S807
S808
VOLUME
S301
DIGITAL MEGA BASS
S802
HOLD
S803
AVLS
S801
DOOR
OPEN/CLOSE
D801
OPERATE
TAP801
TEST
(OPEN:NORMAL MODE)
(SHORT:TEST MODE)
POWER SUPPLY
IC901
SYSTEM
CONTROL
PW
STANDBY
MUTE
J501
/REMOTE
B+
(+2.6V)
B+
(+1.5V)
DC IN 1.5V
DRY BATTERY
SIZE"AA"
(IEC DESIGNATION R6)
1PC. 1.5V
RECHARGEABLE BATTERY
(NH-9WM)
1PC. 1.5V
STEP-UP
DC-DC
CONVERTER
RESET
CHARGE
PUMP
MODE
SELECT
VCC
(+2.6V)
B+
(+2.6V)
• Signal path.
: PLAY

02



***Note:**
Use R1001 only with Ver.3 of microprocessor (IC801).
Using R1001 with other microprocessor versions will cause operating errors so be sure to remove it.
You can check the version with Test Mode (page 7).

● Waveform.

① IC501 28	VOLT/DIV : 200 mV AC TIME/DIV : 5 μsec	⑤ IC901 15 VB	VOLT/DIV : 0.1 V AC TIME/DIV : 2 μsec
② IC601 29	VOLT/DIV : 1 V AC TIME/DIV : 10 μsec	⑥ IC901 21 DI	VOLT/DIV : 20 mV AC TIME/DIV : 2 μsec
③ IC601 44	VOLT/DIV : 500 mV AC TIME/DIV : 200 nsec	⑦ IC901 22 PWMI	VOLT/DIV : 2 V AC TIME/DIV : 2 μsec
④ IC601 48	VOLT/DIV : 500m V AC TIME/DIV : 20 nsec	⑧ IC551 19 L1	VOLT/DIV : 1 V AC TIME/DIV : 2 μsec

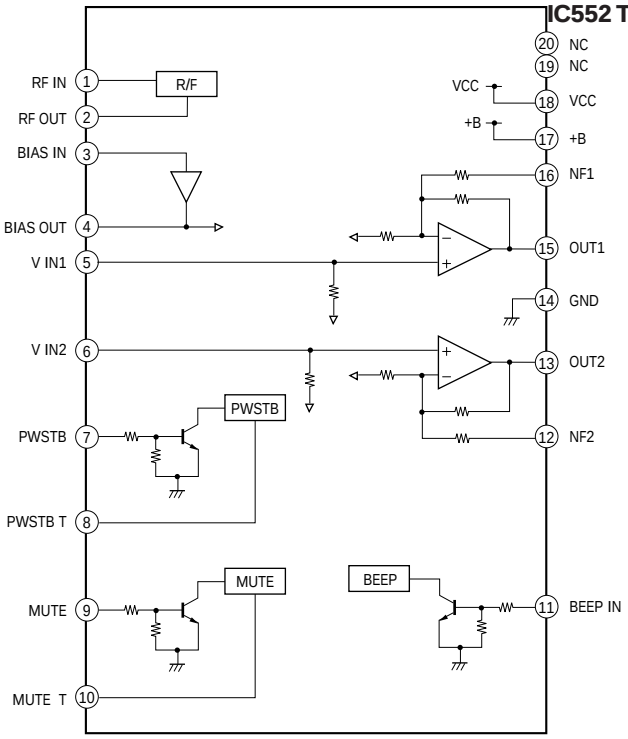
Note:
- All capacitors are in μF unless otherwise noted. pF: μμF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

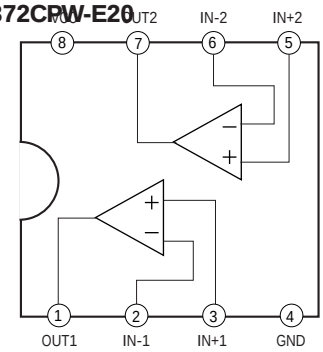
- ▬▬ : B+ Line.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
- Voltages and currents are taken with a VOM (Input impedance 10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : PLAY

● IC Block Diagrams

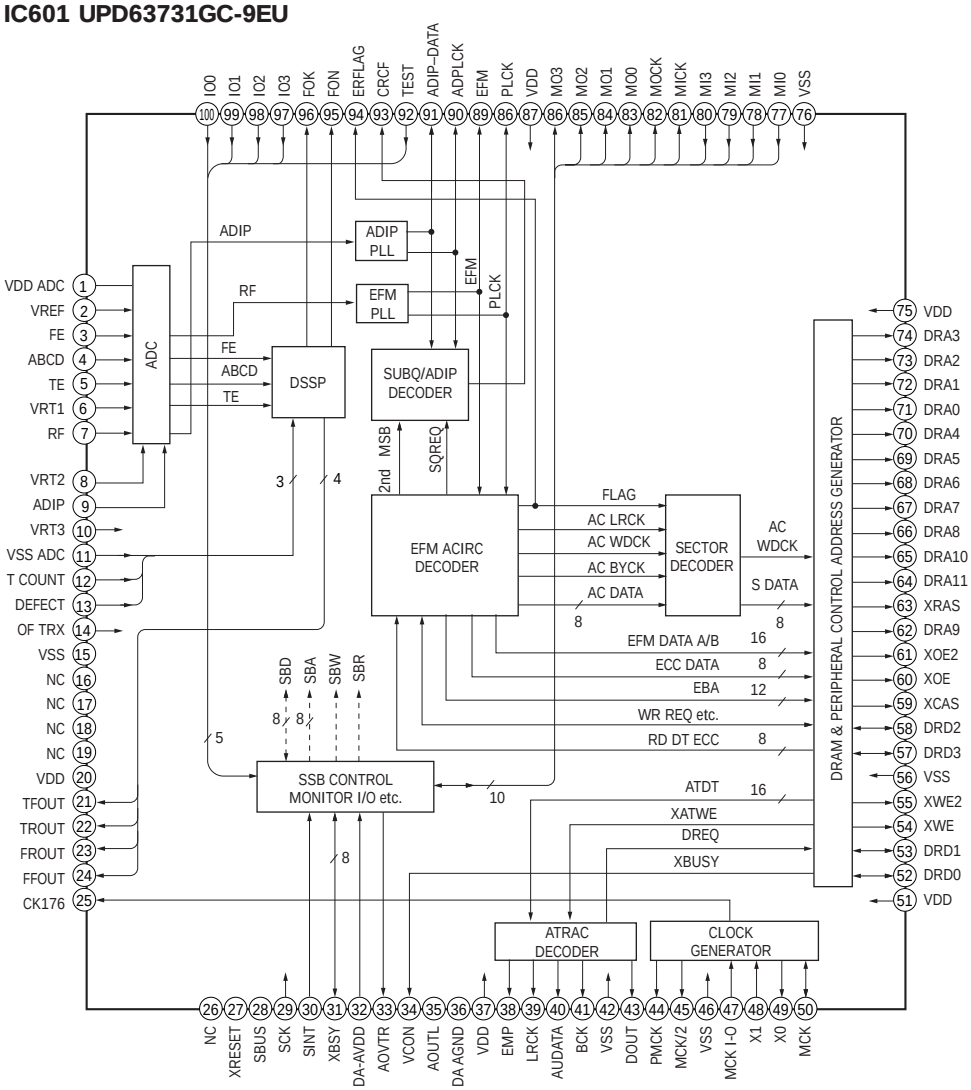
IC301 BA3577FS-E2



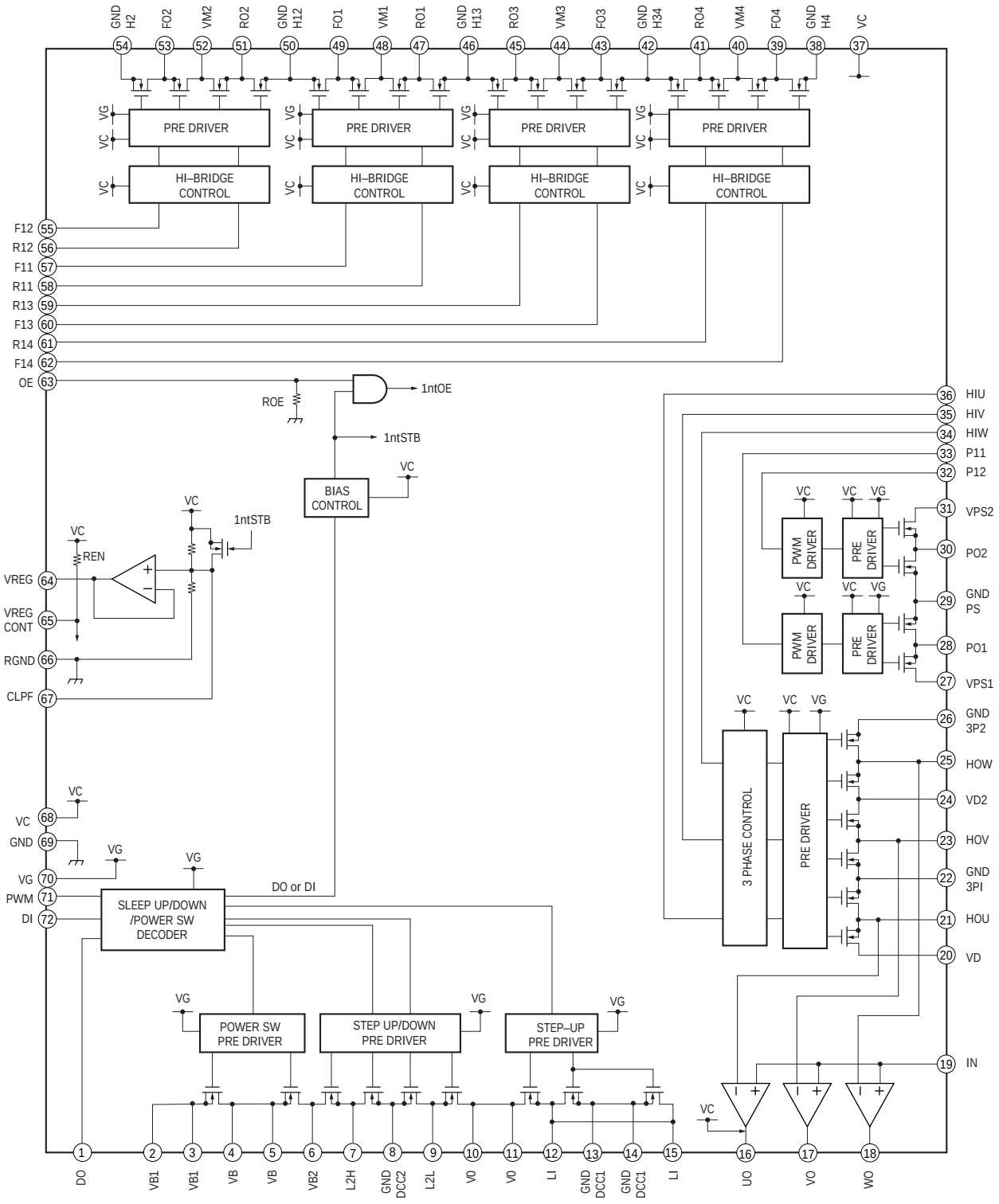
IC552 TLC372CPW-E20



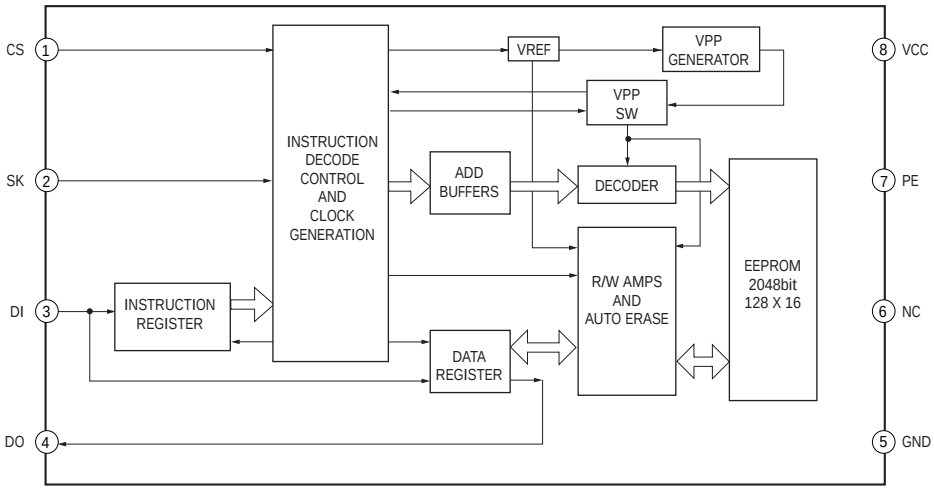
IC601 UPD63731GC-9EU



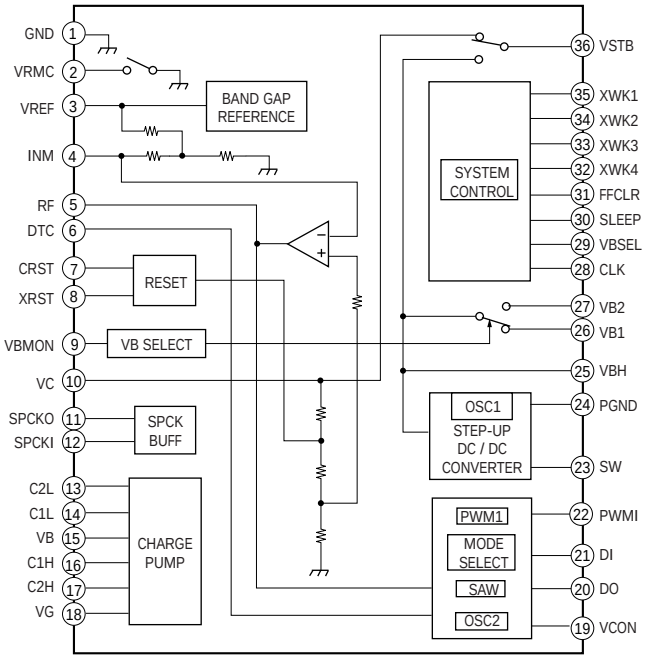
IC551 MPC17A55FTA



IC802 AK93C55AV-L



IC901 MPC1830ADTB



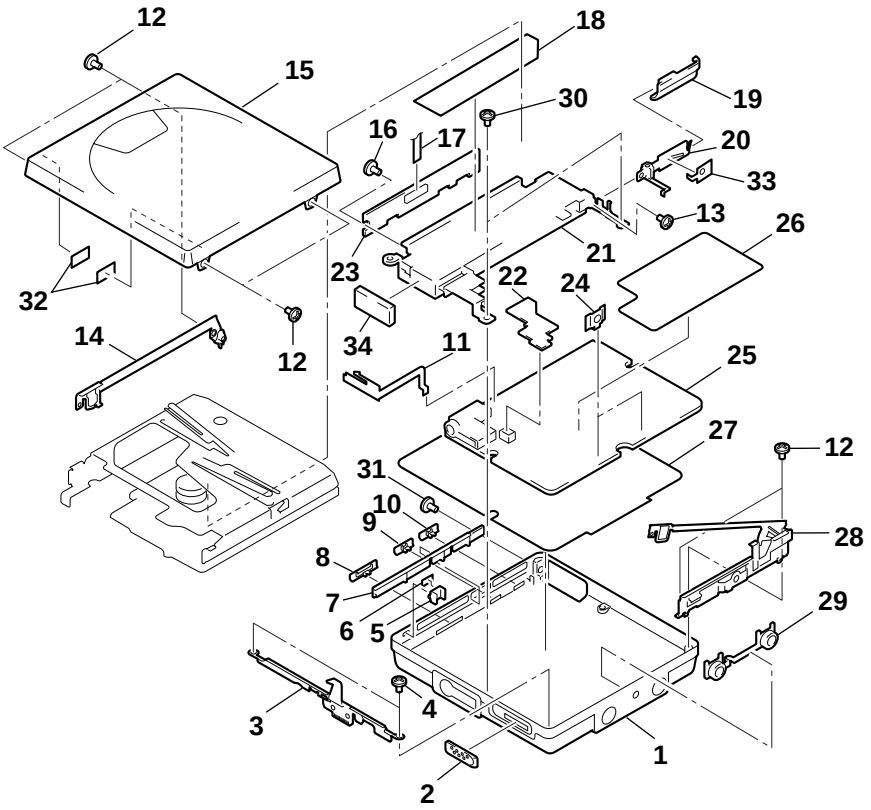
SECTION 7
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ••• (RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
  HK : Hong Kong

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

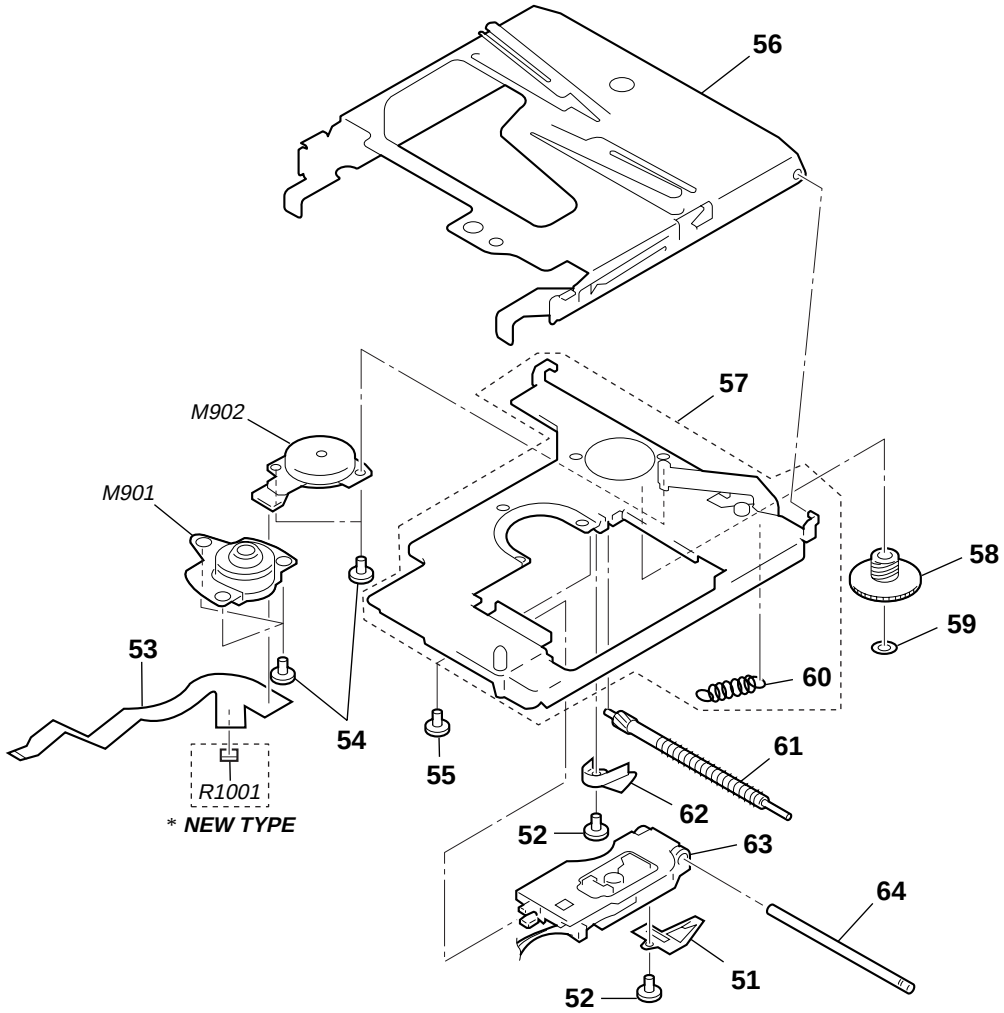
7-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	4-212-867-01	PANEL, BOTTOM (GOLD)	
1	4-212-867-11	PANEL, BOTTOM (BLUE) (HK)	
2	4-212-872-01	KNOB, OPEN	
3	X-4950-410-1	SLIDER ASSY, OPEN	
4	4-963-883-61	SCREW (M1.4), PRECISION PAN	
5	4-212-884-01	WINDOW (LED)	
6	4-212-885-01	SHEET (LED), ADHESIVE	
7	4-212-868-01	BUTTON, CONTROL	
8	4-212-883-01	KNOB (HOLD) (GOLD)	
8	4-212-883-11	KNOB (HOLD) (BLUE) (HK)	
9	4-212-882-01	KNOB (MB) (GOLD)	
9	4-212-882-11	KNOB (MB) (BLUE) (HK)	
10	4-213-653-11	KNOB (AVLS) (BLUE) (HK)	
10	4-213-653-01	KNOB (AVLS) (GOLD)	
11	4-212-895-01	TERMINAL BOARD (MINUS)	
12	4-963-883-21	SCREW (M1.4), PRECISION PAN (GOLD)	
12	4-963-883-31	SCREW(M1.4), PRECISION PAN (BLUE) (HK)	
13	4-963-883-21	SCREW (M1.4), PRECISION PAN	
14	X-4950-413-1	PLATE (L) ASSY, FULCRUM	
15	X-4950-578-1	UPPER PANEL ASSY (GOLD)	
15	X-4950-579-1	UPPER PANEL ASSY (BLUE) (HK)	

Ref. No.	Part No.	Description	Remark
16	3-375-114-61	SCREW	
17	1-670-708-11	SWITCH FLEXIBLE BOARD	
18	4-213-092-01	LABEL, CAUTION	
19	4-212-873-11	LID, BATTERY CASE (BLUE) (HK)	
19	4-212-873-01	LID, BATTERY CASE (GOLD)	
20	X-4950-411-1	TERMINAL (PLUS) ASSY, BATTERY	
21	4-212-886-01	CASE, BATTERY	
* 22	1-670-711-11	AUDIO BOARD	
* 23	1-670-710-11	SWITCH BOARD	
24	4-212-901-01	TERMINAL	
25	A-3323-057-A	MAIN BOARD, COMPLETE	
26	4-212-871-01	SHEET, BLIND	
27	4-212-870-01	SHEET, INSULATING	
28	X-4950-419-1	PLATE (R) ASSY, FULCRUM	
29	4-212-869-01	ESCUTCHEON	
30	3-365-630-02	SCREW (M1.4) STEP	
31	3-365-630-21	SCREW (M1.4) STEP (GOLD)	
31	3-365-630-31	SCREW (M1.4) STEP (BLUE) (HK)	
32	4-215-298-01	SPACER (FULCRUM)	
33	4-214-628-01	SPACER (PLUS TERMINAL)	
34	4-214-158-01	DAMPER (-)	

7-2. MECHANISM DECK SECTION (MT-MZE55-150)



***Note:**
Use R1001 only with Ver.3 of microprocessor (IC801).
Using R1001 with other microprocessor versions will cause operating errors so be sure to remove it.
You can check the version with Test Mode (page 7).

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	4-982-561-11	SPRING, RACK	
52	4-963-883-61	SCREW (M1.4), PRECISION PAN	
53	1-670-707-11	CLV FLEXIBLE BOARD	
54	4-963-883-21	SCREW (M1.4), PRECISION PAN	
55	3-349-825-82	SCREW, PRECISION	
56	4-212-896-01	HOLDER	
57	X-4950-414-1	CHASSIS ASSY	
58	4-982-555-01	GEAR (A)	
59	4-965-893-01	WASHER, GEAR (A) STOPPER	
60	4-986-811-01	SPRING (EJECT), TENSION	

Ref. No.	Part No.	Description	Remark
61	X-4948-793-1	LEAD SCREW ASSY	
62	4-212-899-01	SPRING, THRUST	
⚠63	X-4949-164-1	OPTICAL PICK-UP BLOCK ASSY	
64	4-214-478-01	SHAFT (MAIN)	
M901	8-835-594-02	MOTOR, DC (SPINDLE)	
M902	1-698-764-21	MOTOR, SLED (SLED) (INCLUDING GEAR)	
R1001	1-216-789-11	METAL CHIP 2.2 5% 1/16W	(NEW TYPE)

SECTION 8
ELECTRICAL PARTS LIST

AUDIO **MAIN**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  HK : Hong Kong

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-670-711-11	AUDIO BOARD			
		**********			
		< CAPACITOR >			
C102	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C103	1-115-156-11	CERAMIC CHIP	1uF	10V	
C202	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C203	1-115-156-11	CERAMIC CHIP	1uF	10V	
C301	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C302	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C303	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C304	1-127-578-91	TANTAL. CHIP	3.3uF	20%	6.3V
C305	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C306	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C307	1-113-600-11	TANTAL. CHIP	2.2uF	20%	6.3V
		< CONNECTOR >			
* CN302	1-750-281-31	CONNECTOR, BOARD TO BOARD 10P			
		< IC >			
IC301	8-759-431-56	IC BA3577FS-E2			
		< RESISTOR >			
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R301	1-216-809-11	METAL CHIP	100	5%	1/16W
R304	1-216-803-11	METAL CHIP	33	5%	1/16W
**********					
	A-3323-057-A	MAIN BOARD, COMPLETE			
		**********			
	4-212-901-01	TERMINAL			
		< CAPACITOR >			
C101	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C201	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C308	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C311	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C312	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C313	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C315	1-115-156-11	CERAMIC CHIP	1uF		10V
C316	1-127-574-91	TANTAL. CHIP	22uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C501	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C502	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C503	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C504	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C505	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C509	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C510	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C551	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C552	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C553	1-135-238-21	TANTAL. CHIP	6.8uF	20%	10V
C554	1-135-238-21	TANTAL. CHIP	6.8uF	20%	10V
C555	1-107-765-11	TANTAL. CHIP	3.3uF	20%	16V
C556	1-107-765-11	TANTAL. CHIP	3.3uF	20%	16V
C557	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C558	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C559	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C560	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C561	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C562	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C563	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C564	1-117-232-11	TANTALUM	22uF	20%	4V
C565	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C568	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C569	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C570	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C571	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C572	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C601	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C603	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C605	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C607	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C611	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C612	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C613	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C801	1-162-962-11	CERAMIC CHIP	470PF	10%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C805	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C806	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C807	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C808	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C809	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C831	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C832	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C833	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C834	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C903	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C904	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C905	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C906	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C907	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C908	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C909	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C910	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C911	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C918	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN301	1-750-316-31	CONNECTOR, BOARD TO BOARD 10P			
* CN501	1-778-168-11	CONNECTOR, FFC/FPC (ZIF) 20P			
* CN551	1-785-218-21	CONNECTOR, FPC (ZIF) 8P			
* CN801	1-785-219-21	CONNECTOR, FPC (ZIF) 9P			
		< DIODE >			
D151	8-719-017-58	DIODE MA8068			
D251	8-719-017-58	DIODE MA8068			
D351	8-719-017-58	DIODE MA8068			
D841	8-719-066-17	DIODE FTZ6.8E-T148			
D901	8-719-420-51	DIODE MA729			
D902	8-719-066-16	DIODE RB491D-T146			
		< FERRITE BEAD >			
FB601	1-414-227-11	INDUCTOR, FERRITE BEAD			
FB841	1-414-228-11	INDUCTOR, FERRITE BEAD			
FB842	1-414-228-11	INDUCTOR, FERRITE BEAD			
		< IC >			
IC302	8-759-541-32	IC AK4350-VF-E1			
IC501	8-759-538-56	IC SN761054			
IC551	8-759-390-25	IC MPC17A55FTA			
IC552	8-759-358-40	IC TLC372CPW-E20			
IC601	8-759-538-55	IC uPD63731GC-9EU			
IC603	8-759-538-44	IC MSM51V17400D-10TK-FS			
IC801	8-759-560-39	IC RU6815MF-0003 (FORMER TYPE)			
IC801	8-759-564-20	IC RU6815MF-0004 (NEW TYPE)			
IC802	8-759-449-23	IC AK93C55AV-L			
IC901	8-759-538-57	IC MPC1830ADTB			
		< JACK >			
J301	1-779-867-61	JACK (🎧/REMOTE)			

Ref. No.	Part No.	Description			Remark
		< COIL >			
L501	1-412-006-31	INDUCTOR CHIP	10uH		
L551	1-412-031-11	INDUCTOR CHIP	47uH		
L552	1-412-031-11	INDUCTOR CHIP	47uH		
L553	1-412-030-11	INDUCTOR CHIP	22uH		
L554	1-412-030-11	INDUCTOR CHIP	22uH		
L555	1-412-031-11	INDUCTOR CHIP	47uH		
L556	1-414-410-21	INDUCTOR	10uH		
L901	1-412-032-11	INDUCTOR CHIP	100uH		
L902	1-416-668-11	COIL, CHOKE	10uH		
L903	1-414-410-21	INDUCTOR	10uH		
		< TRANSISTOR >			
Q501	8-729-922-10	TRANSISTOR	2SA1577-QR		
Q551	8-729-904-87	TRANSISTOR	2SB1197K-R		
Q552	8-729-929-11	TRANSISTOR	DTC143ZE-TL		
		< RESISTOR >			
R101	1-216-835-11	METAL CHIP	15K	5%	1/16W
R102	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R201	1-216-835-11	METAL CHIP	15K	5%	1/16W
R202	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R302	1-216-803-11	METAL CHIP	33	5%	1/16W
R303	1-216-797-11	METAL CHIP	10	5%	1/16W
R501	1-216-817-11	METAL CHIP	470	5%	1/16W
R502	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R503	1-216-853-11	METAL CHIP	470K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-864-11	METAL CHIP	0	5%	1/16W
R507	1-216-864-11	METAL CHIP	0	5%	1/16W
R508	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R509	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-216-833-11	METAL CHIP	10K	5%	1/16W
R554	1-216-833-11	METAL CHIP	10K	5%	1/16W
R555	1-216-809-11	METAL CHIP	100	5%	1/16W
R556	1-216-853-11	METAL CHIP	470K	5%	1/16W
R601	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-845-11	METAL CHIP	100K	5%	1/16W
R802	1-216-845-11	METAL CHIP	100K	5%	1/16W
R803	1-216-853-11	METAL CHIP	470K	5%	1/16W
R804	1-216-853-11	METAL CHIP	470K	5%	1/16W
R808	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R810	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R811	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R812	1-216-841-11	METAL CHIP	47K	5%	1/16W
R819	1-216-853-11	METAL CHIP	470K	5%	1/16W
R820	1-216-845-11	METAL CHIP	100K	5%	1/16W
R821	1-216-857-11	METAL CHIP	1M	5%	1/16W
R841	1-216-809-11	METAL CHIP	100	5%	1/16W
R842	1-216-809-11	METAL CHIP	100	5%	1/16W
R901	1-216-845-11	METAL CHIP	100K	5%	1/16W
R902	1-216-853-11	METAL CHIP	470K	5%	1/16W
R903	1-216-863-11	RES,CHIP	3.3M	5%	1/16W
R904	1-216-845-11	METAL CHIP	100K	5%	1/16W
R906	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R909	1-216-847-11	METAL CHIP	150K	5%	1/16W
R910	1-218-871-11	RES,CHIP	10K	0.50%	1/16W

Ref. No.	Part No.	Description			Remark
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R912	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB551	1-233-961-11	RES, NETWORK (CHIP TYPE) 1K			
RB552	1-233-979-11	RES, NETWORK (CHIP TYPE) 1M			
RB801	1-233-977-11	RES, NETWORK (CHIP TYPE) 470K			
		< VIBRATOR >			
X601	1-781-038-21	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-670-710-11	SWITCH BOARD **********			
		< CAPACITOR >			
C802	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN802	1-785-217-21	CONNECTOR, FPC (ZIF) 9P			
		< DIODE >			
D801	8-719-051-01	LED CL-170HR-CD-T (OPERATE)			
		< RESISTOR >			
R814	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R815	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R816	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R817	1-216-835-11	METAL CHIP	15K	5%	1/16W
R818	1-216-839-11	METAL CHIP	33K	5%	1/16W
		< SWITCH >			
S301	1-762-079-11	SWITCH, SLIDE (DIGITAL MEGA BASS)			
S801	1-771-483-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)			
S802	1-762-078-11	SWITCH, SLIDE (HOLD ➘)			
S803	1-762-078-11	SWITCH, SLIDE (AVLS)			
S804	1-771-138-21	SWITCH, KEY BOARD (■)			
S805	1-771-138-21	SWITCH, KEY BOARD (▶▶I▶)			
S806	1-771-138-21	SWITCH, KEY BOARD (I◀◀)			
S807	1-771-138-21	SWITCH, KEY BOARD (VOLUME +)			
S808	1-771-138-21	SWITCH, KEY BOARD (VOLUME -)			
**********					
		MISCELLANEOUS **********			
17	1-670-708-11	SWITCH FLEXIBLE BOARD			
53	1-670-707-11	CLV FLEXIBLE BOARD			
⚠63	X-4949-164-1	OPTICAL PICK-UP BLOCK ASSY			
M901	8-835-594-02	MOTOR, DC (SPINDLE)			
M902	1-698-764-21	MOTOR, SLED (SLED) (INCLUDING GEAR)			
R1001	1-216-789-11	METAL CHIP	2.2	5%	1/16W (NEW TYPE)

• Note:
Use R1001 only with Ver.3 of microprocessor (IC801).
Using R1001 with other microprocessor versions will cause operating errors so be sure to remove it.
You can check the version with Test Mode (page 7).

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS **********	
	1-475-831-21	REMOTE CONTROL UNIT (RM-MZE55) (GOLD)	
	1-475-831-51	REMOTE CONTROL UNIT (RM-MZE55) (BLUE)	(HK)
	1-528-918-11	BATTERY CASE	
⚠	1-528-866-11	BATTERY CHARGER (BC-9HP2) (HK)	
⚠	1-528-580-21	BATTERY CHARGER (BC-7HT) (Tourist)	
	1-528-743-11	BATTERY, NICKEL HYDROGEN	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (Tourist)	
	3-008-521-01	CASE, BATTERY CHARGE	
	3-865-053-11	MANUAL, INSTRUCTION (SPANISH,CHINESE)	(Tourist)
	3-865-053-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH)	(Tourist)
	3-865-053-61	MANUAL, INSTRUCTION (ENGLISH,CHINESE)	(HK)
	3-865-053-71	MANUAL, INSTRUCTION (JAPANESE, KOREAN)	(Tourist)
	4-972-888-01	CASE, CARRYING	
	8-953-218-90	HEADPHONE MDR-E838SP//K SET	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-924-958-11

Sony Corporation
Personal A&V Products Company

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(Shibaura)

MZ-E55

SERVICE MANUAL

Ver 1.1 1999.1

US Model
AEP Model
UK Model
E Model
Tourist Model

US and foreign patents licensed from Dolby Laboratories Licensing Corporation

Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MT-MZE55-150
Optical Pick-up Mechanism Type	ODX-1A/1B

SPECIFICATIONS

System

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 µW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.
Revolutions
400 rpm to 900 rpm (CLV)
Error correction
Advanced Cross Interleave Reed Solomon Code (ACIRC)
Sampling frequency
44.1 kHz
Coding
Adaptive TRansform Acoustic Coding (ATRAC)
Modulation system
EFM (Eight to Fourteen Modulation)
Number of channels
2 stereo channels
1 monaural channel
Frequency response
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Outputs
Headphones: stereo mini-jack, maximum output level 5 mW + 5 mW, load impedance 16 ohm

General

Power requirements
Nickel metal hydride rechargeable battery NH-9WM (supplied)
One LR6 (size AA) battery (not supplied)
Sony AC Power Adaptor AC-E15L (not supplied) connected to the DC IN 1.5 V jack

Battery operation time

Battery life

Batteries	Playback
Ni-MH rechargeable battery (NH-9WM)	Approx. 7.5 hours
One LR6 (size AA) alkaline battery	Approx. 10 hours
One size AA(LR6) alkaline battery and a Ni-MH rechargeable battery (NH-9WM)	Approx. 20 hours

Dimensions
Approx. 79.7 × 14.9 × 71.9 mm (w/h/d) ($3\,^{1}/_{4} \times {}^{19}/_{32} \times 2\,^{7}/_{8}$ in.) not including projecting parts and controls
Mass
Approx. 80 g (2.9 oz.) the player only
Approx. 120 g (4.3 oz.) incl. a premastered MD and a nickel metal hydride rechargeable battery NH-9WM(N)
Supplied accessories
Battery Charger (1)
Rechargeable battery (1)
Rechargeable battery carrying case (1)
Headphones with a remote control (1)
Dry battery case (1)
Carrying pouch (1)
AC plug adaptor (Tourist model) (1)

Design and specifications are subject to change without notice.

PORTABLE MINIDISC PLAYER

MICROFILM

SONY®

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CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Mini Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

"MD WALKMAN" is a trademark of Sony Corporation.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

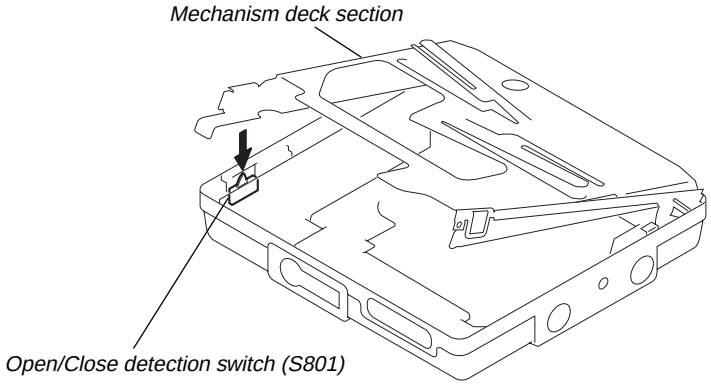
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

SECTION 1
SERVICING NOTE

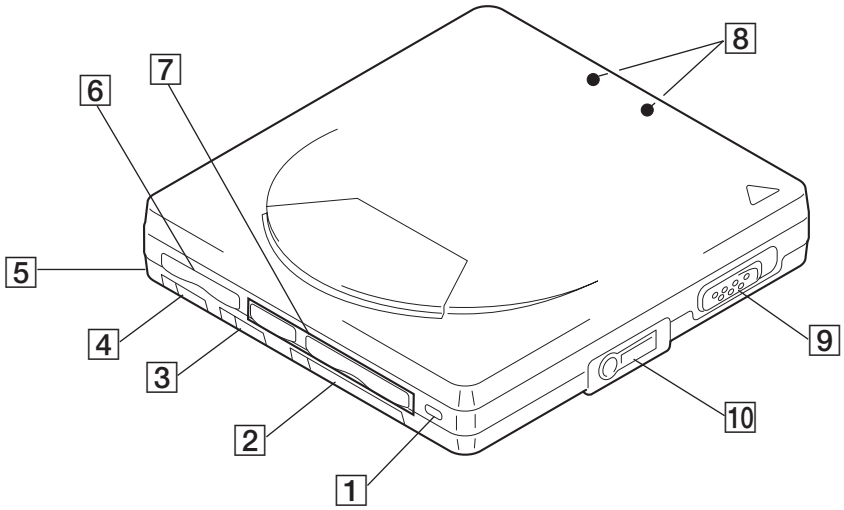
When repairing this device with the power on, if you remove the main board, this device stops working.
In this case, you work without the device stopping by fastening the hook of the Open/Close detection switch (S801).



SECTION 2
GENERAL

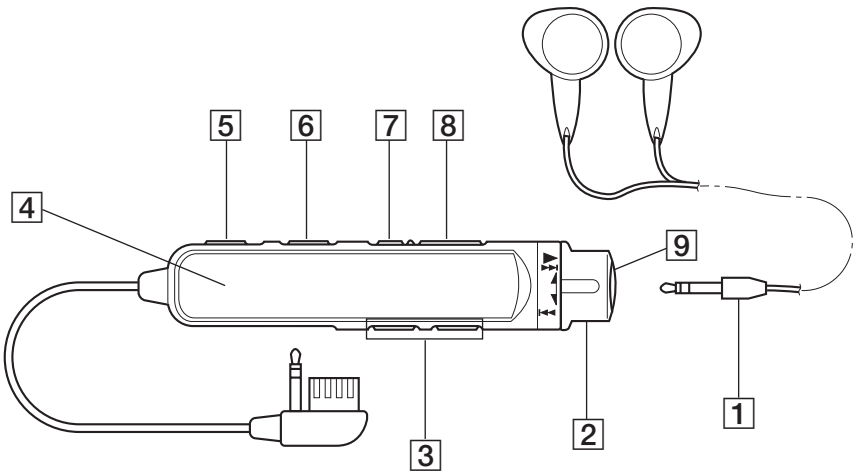
LOCATION AND FUNCTION OF CONTROLS

Main Unit



1 OPERATE lamp
2 HOLD switch
3 DIGITAL MEGA BASS switch
4 AVLS switch
5 Battery compartment
6 VOLUME +/– buttons
7 MD operate buttons
▶▶I ▶ (FF • PLAY)
I◀◀ (REW)
■ (STOP)
8 External battery terminal (+/–)
9 OPEN knob
10 🎧 / REMOTE jack

Headphones with Remote Control



1 Headphones
2 MD operate switch and buttons
▶ • ▶▶I (PLAY • FF)
I◀◀ (REW)
■ (STOP)
3 VOL +/– button
4 Display window
5 DISPLAY button
6 PLAYMODE button
7 ❚❚ (PAUSE) button
8 HOLD ➞ switch
9 ■ (STOP) button

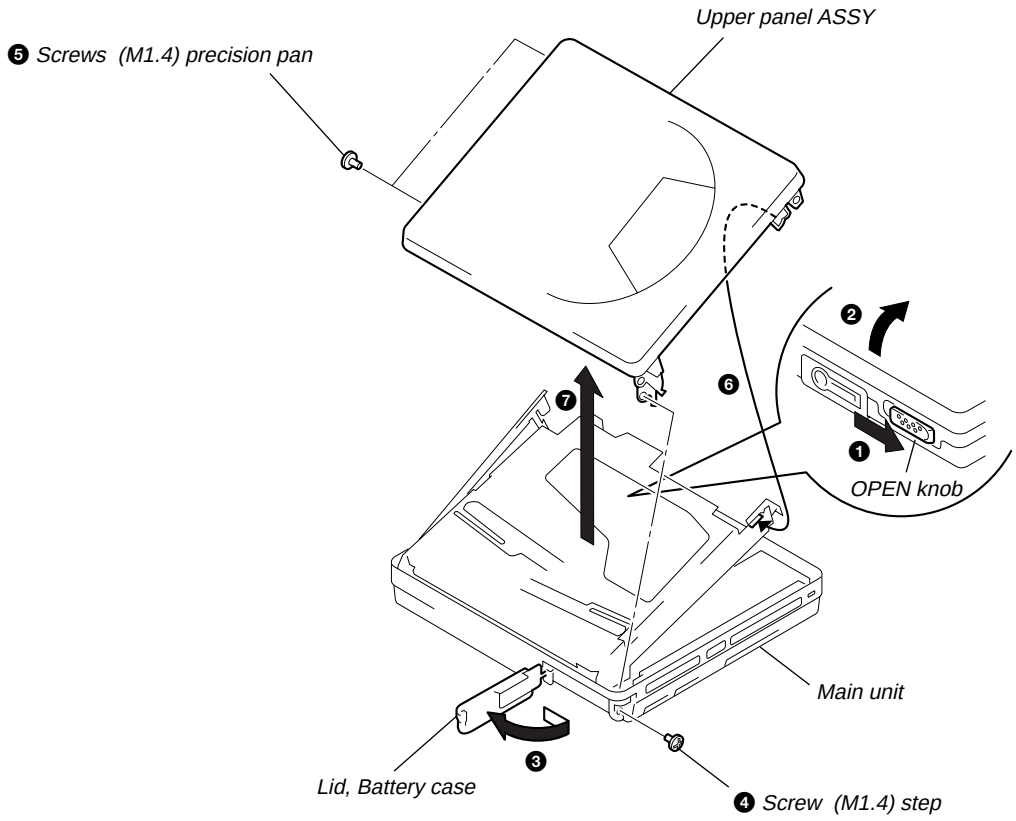
SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

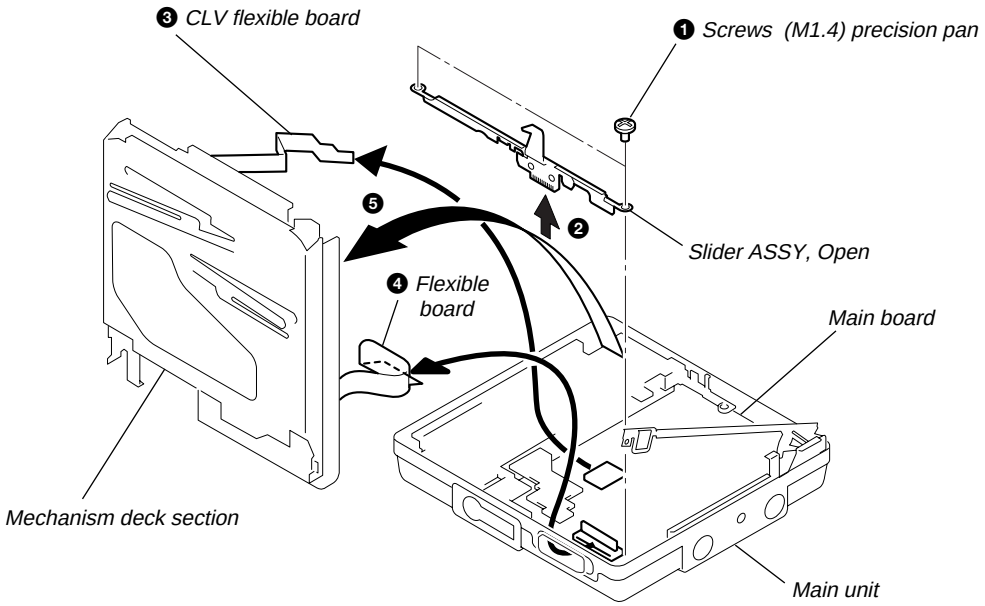
set → Upper panel ASSY → Mechanism deck section → Main board, Audio board → Switch board
Optical pick-up block ASSY

Note : Follow the disassembly procedure in the numerical order given.

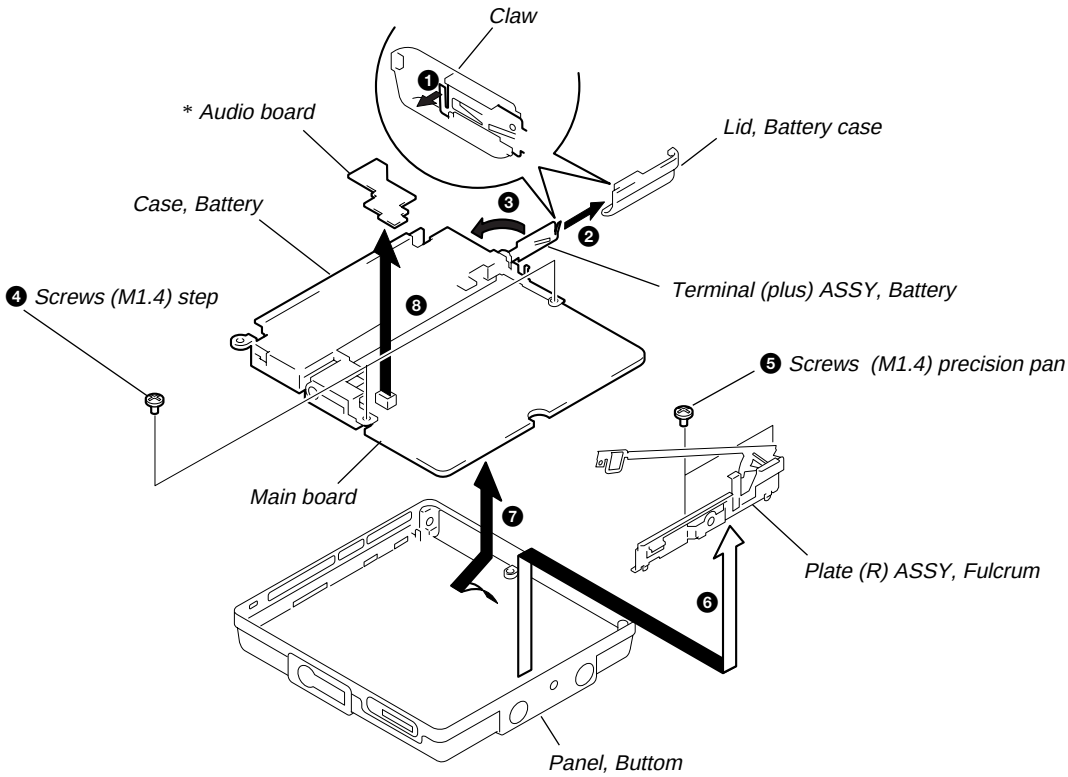
3-1. UPPER PANEL ASSY



3-2. MECHANISM DECK SECTION

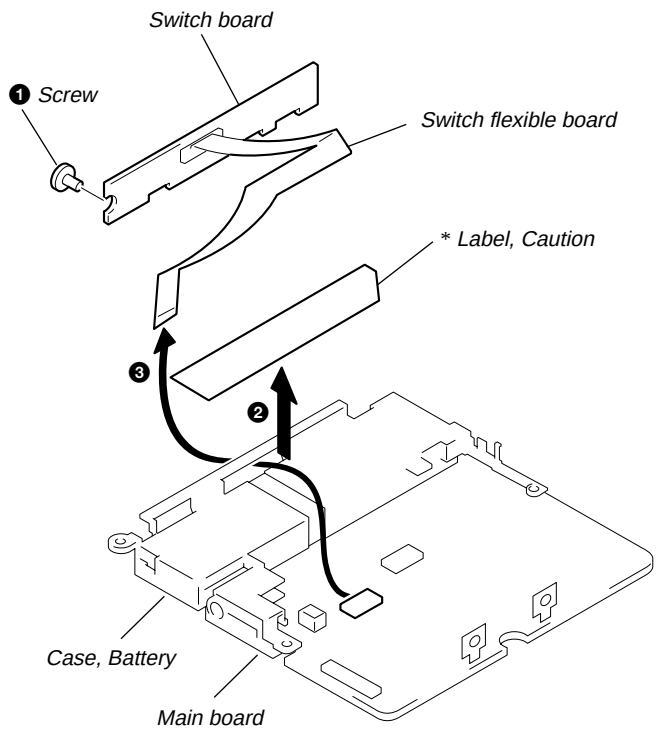


3-3. MAIN BOARD, AUDIO BOARD



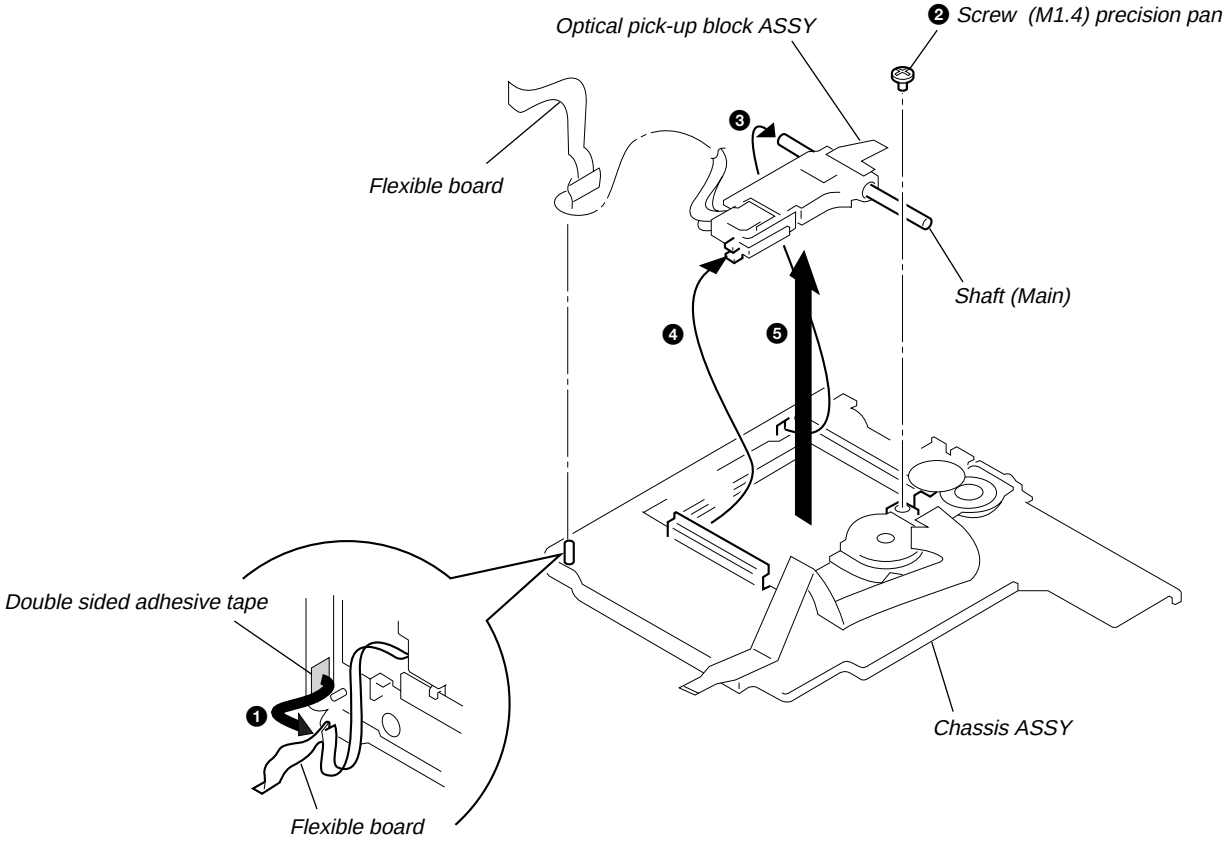
* **NOTE :**
When removing the audio board, lift up on the board so that the connector separates vertically.

3-4. SWITCH BOARD



* **NOTE :**
The caution label (4-213-092-01) affixed to the switch-flexible board will be damaged or deformed when the switch board or the switch-flexible board is removed so replace it with a new caution label.

3-5. OPTICAL PICK-UP BLOCK ASSY



SECTION 4
TEST MODE

Outline

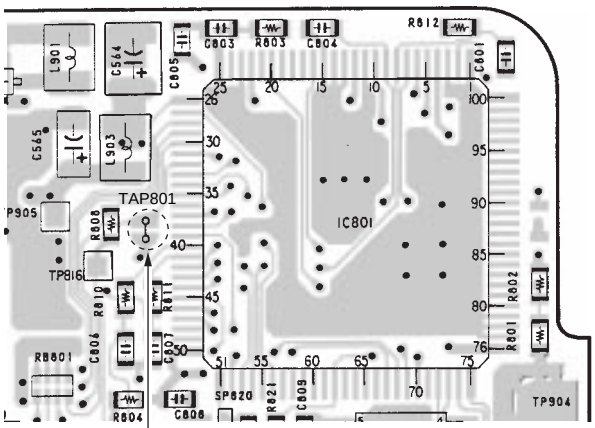
- In this set, overall adjustment mode is made available by entering test mode to perform automatic adjustment of CD and MO. In the overall adjustment mode, the disc is determined whether it is CD or MO and adjustments are performed in sequence. If a fault is found, the location of the fault is displayed. Also, in servo mode, each adjustment can be automatically made.
- Operation in the test mode is performed with the Remote Commander. A key having no particular description in the text, indicates a Remote Commander key.

Setting the Test Mode

To enter the test mode, two methods are available :

1. Entering method with key input.
   Turn on the HOLD switch on the set. While holding down the ■ key on the set, press the following remote commander keys in the following order :
   ▶▶I → ▶▶I → I◀◀ → I◀◀ → ▶▶I → I◀◀ → ▶▶I → I◀◀ → II → II
2. Entering method by shorting the test point
   Solder bridge the test point TAP801 (TEST) on the main board (connect IC801 pin ㉜ to GND), and turn on the POWER.

[MAIN BOARD] (Conductor side)



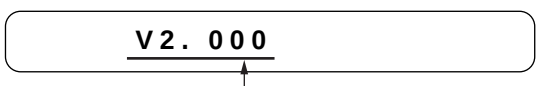
Test mode
(Short : Test mode
Open : Normal mode)

Releasing the Test Mode

1. When test mode was entered with key input, turn off the POWER.
2. When test mode was entered by shorting the test point, turn off the POWER and open the solder bridge of TAP801 (TEST MODE) on the main board.

Operation of Setting on Test Mode

When the test mode is set, the LCD displays the following :



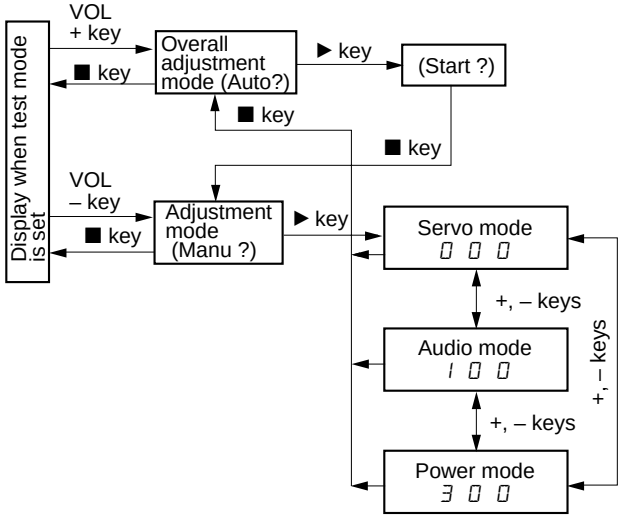
ROM version display

LCD on remote commander

- The cycle - the above ROM version display → All lit → All off - is repeated.
  (The ROM version is constantly displayed.)
- When the PLAY MODE key is pressed and hold down, the display at that time is held so that display can be checked.

Configuration of Test Mode

The test mode has the configuration given below.

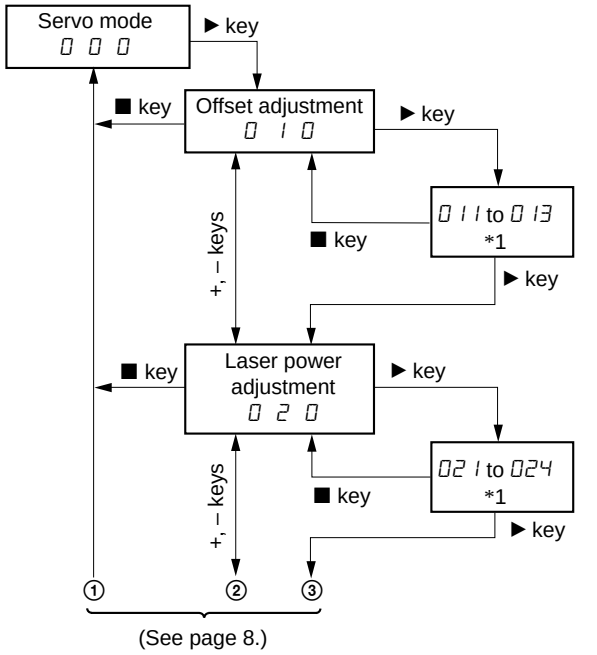


Displays of the LCD on the remote commander are shown in parentheses.

Servo Mode

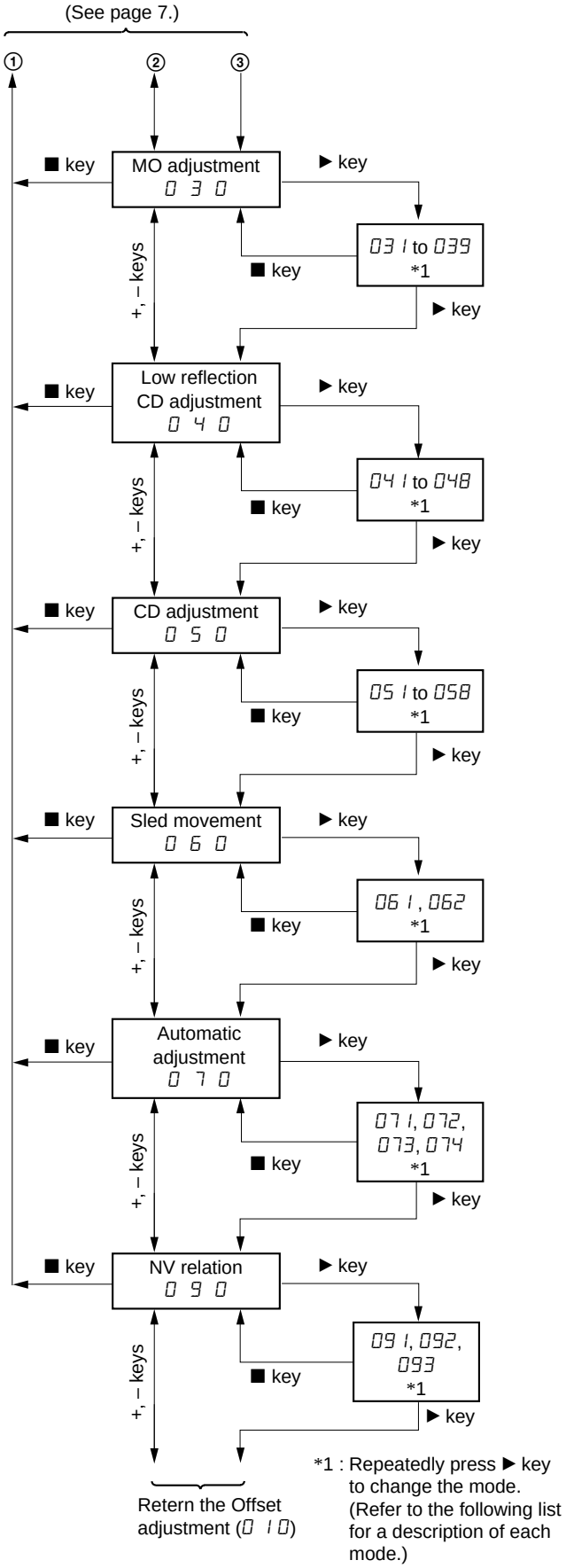
- Set the test mode, press the VOLUME – key and use the ▶ key to set the servo mode.
- When the servo mode is set, use the ▶▶I key and the I◀◀ key to move the optical pick-up to the outer circumference and to the inner circumference respectively.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Servo Mode



(See page 8.)

*1 Repeatedly press ▶ key to change the mode. (Refer to the following list for a description of each mode.)



2. Description of Each Mode

0 10 Offset adjustment

Mode	Description
011	FE offset
012	TE offset
013	All servo ON

020 Laser power adjustment

Mode	Description
021	MO power A
022	MO power E
023	CDL power
024	CD power

030 MO adjustment

Mode	Description
031	MO EF balance
032	MO EF gain
033	MO ABCD gain
034	MO focus gain
035	MO tracking gain
036	MO RF gain
037	MO ADIP gain
038	MO focus bias E
039	CD focus bias A

040 Lower reflection CD adjustment

Mode	Description
041	Lower reflection CD EF balance
042	Lower reflection CD EF gain
043	Lower reflection CD ABCD gain
044	Lower reflection CD focus gain
045	Lower reflection CD tracking gain
046	Lower reflection CD RF offset
047	Lower reflection CD RF gain
048	Lower reflection CD focus bias

050 CD adjustment

Mode	Description
051	CD EF balance
052	CD EF gain
053	CD ABCD gain
054	CD focus gain
055	CD tracking gain
056	CD RF offset
057	CD RF gain
058	CD focus bias

060 Sled movement

Mode	Description
061	Sled in
062	Sled out 5

070 Automatic adjustment

Mode	Description
071	Focus search
072	Access 32
073	ADER check
074	Tracking sensitivity adjust

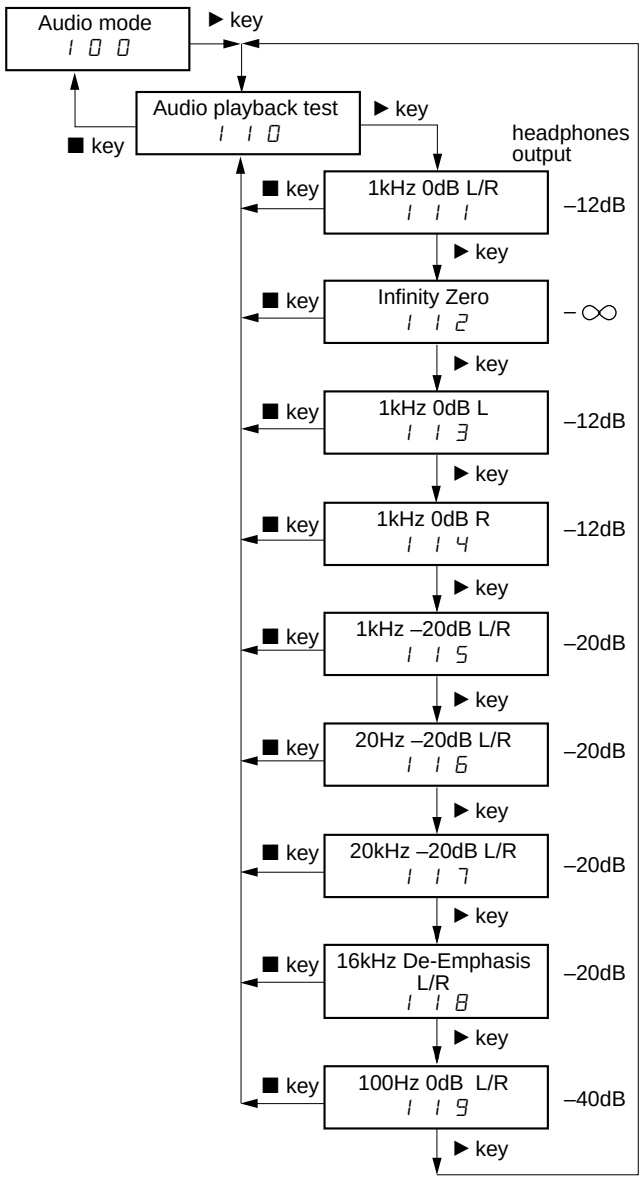
090 NV relation

Mode	Description
091	NV clear
092	Power OFF
093	Function code change

Audio Mode

- Enter the test mode and press the VOLUME – key. Then, press the ► key and the VOLUME + key in this turn to enter audio mode.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Audio Mode

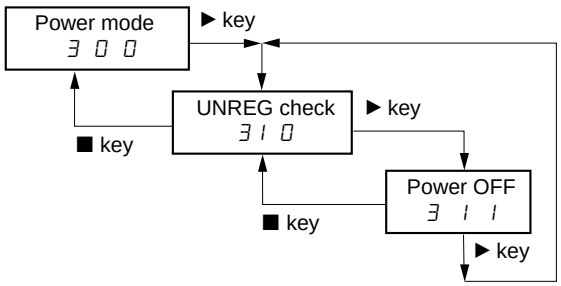


- The mode No. 111 is for S/N and crosstalk. The mode No. 115 is for distortion factor and frequency characteristics.
- When the VOLUME +/– keys is pressed in any mode, the volume of the headphones is changed (increased/decreased) in units of one step. When the ►►I / I◄◄ keys is pressed, the volume of the headphones is maximized/minimized.
- For the volume value, any changed value remains as it is basically.
  However, when the volume is switched from 114 to 115 or 118 to 119, it returns the default value.

Power Mode

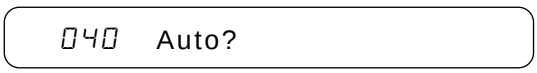
- Enter the test mode and press the VOLUME – key. Then, press the ► key and the VOLUME – key in this turn to enter power mode.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Power Mode

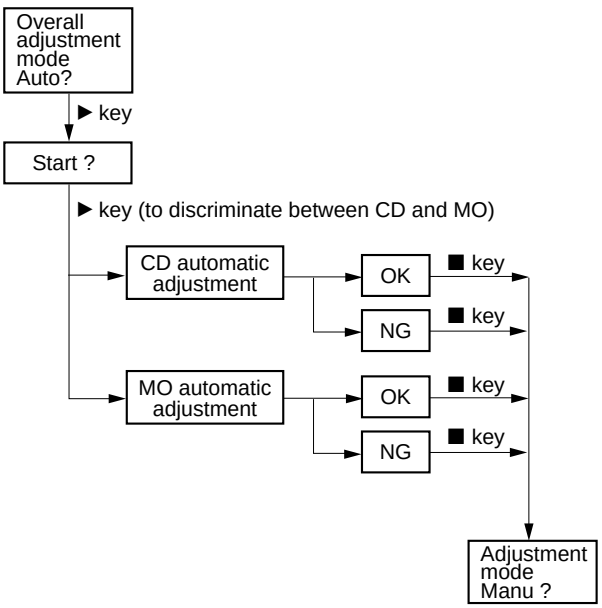


Overall Adjustment Mode

- Enter the test mode and press the VOLUME + key to enter overall adjustment mode.
- When entering another mode, refer to the configuration of test mode.
- When the overall adjustment mode is entered, the LCD on the remote commander display the following :



1. Structure of Overall Adjustment Mode



SECTION 5
ELECTRICAL ADJUSTMENTS

Notes for Adjustment

- In this set, automatic adjustment of CD and MO can be performed by entering the test mode.
- Adjustments are performed in the overall adjustment mode. If an item is determined as NG, the item is readjusted in servo mode.

Adjustment Method in Overall Adjustment Mode

1. Enter the test mode and press the VOLUME + key to enter overall adjustment mode.
2. Insert the CD test disc (TGYS-1) or SONY MO disc (recorded) commercially available.
3. Press the ► key twice. The disc is determined whether it is CD or MO and each adjustment mode is set. Automatic adjustments are performed in the order of the items listed below.

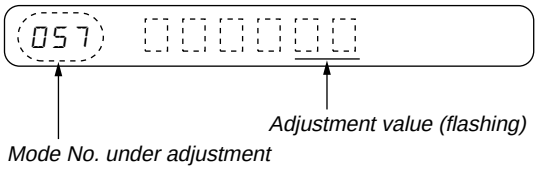
- In CD Automatic adjustment Mode

No.	Mode	Description
1	061	Sled in
2	071	Focus search
3	062	Sled out 5
4	051	CD EF balance
5	052	CD EF gain
6	051	CD EF balance
7	053	CD ABCD gain
8	054	CD focus gain
9	055	CD tracking gain
10	056	CD RF offset
11	057	CD RF gain
12	056	CD RF offset
13	058	CD Focus bias

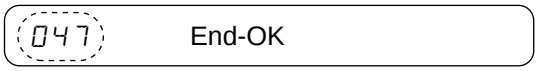
- In MO Automatic adjustment Mode

No.	Mode	Description
1	061	Sled in
2	011	FE offset
3	012	TE offset
4	071	Focus search
5	062	Sled out
6	031	MO EF balance
7	032	MO EF gain
8	031	MO EF balance
9	033	MO ABCD gain
10	034	MO focus gain
11	035	MO tracking gain
12	036	MO RF gain
13	037	MO ADIP gain
14	039	MO focus bias A
15	073	ADER check
16	071	Focus search
17	031	MO EF balance
18	032	MO EF gain
19	031	MO EF balance
20	033	MO ABCD gain
21	034	MO focus gain
22	035	MO tracking gain
23	036	MO RF gain
24	037	MO ADIP gain
25	039	MO focus bias A
26	073	ADER check
27	061	Sled in
28	071	Focus search
29	041	Low reflection CD EF balance
30	042	Low reflection CD EF gain
31	041	Low reflection CD EF balance
32	043	Low reflection CD ABCD gain
33	044	Low reflection CD focus gain
34	045	Low reflection CD tracking gain
35	046	Low reflection CD RF offset
36	047	Low reflection CD RF gain
37	061	Sled in
38	071	Focus search
39	041	Low reflection CD EF balance
40	042	Low reflection CD EF gain
41	041	Low reflection CD EF balance
42	043	Low reflection CD ABCD gain
43	044	Low reflection CD focus gain
44	045	Low reflection CD tracking gain
45	046	Low reflection CD RF offset
46	047	Low reflection CD RF gain

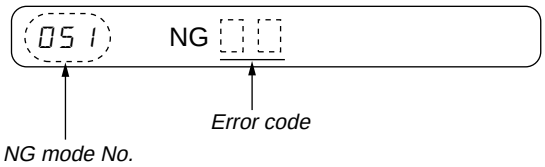
* Remote commander display during automatic adjustment



4. If result of automatic adjustment is OK, the following display appears.



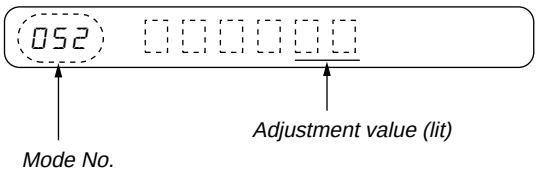
5. If result of automatic adjustment is NG, the following display appears.



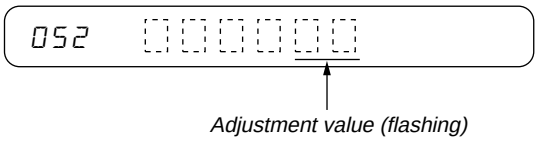
* If NG, enter servo mode to perform automatic adjustment of the item determined as NG.

Adjustment in Servo Mode Method

1. When each adjustment mode is set according to the structure of servo mode, the lower two digits of the mode No. and the adjustment value written in EEPROM are displayed and lit on the LCD on the remote commander.

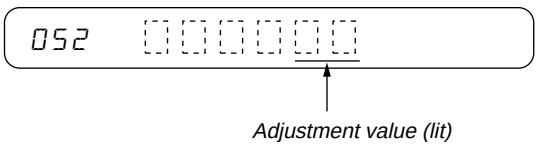


2. When the ▮▮ key is pressed, the following display appears and the automatic adjustment is performed.



Note) Although the VOLUME +/– keys can be used to change the adjustment value to any value, they should not be used whenever possible.

3. When the automatic adjustment is completed, the flashing adjustment value is lit.



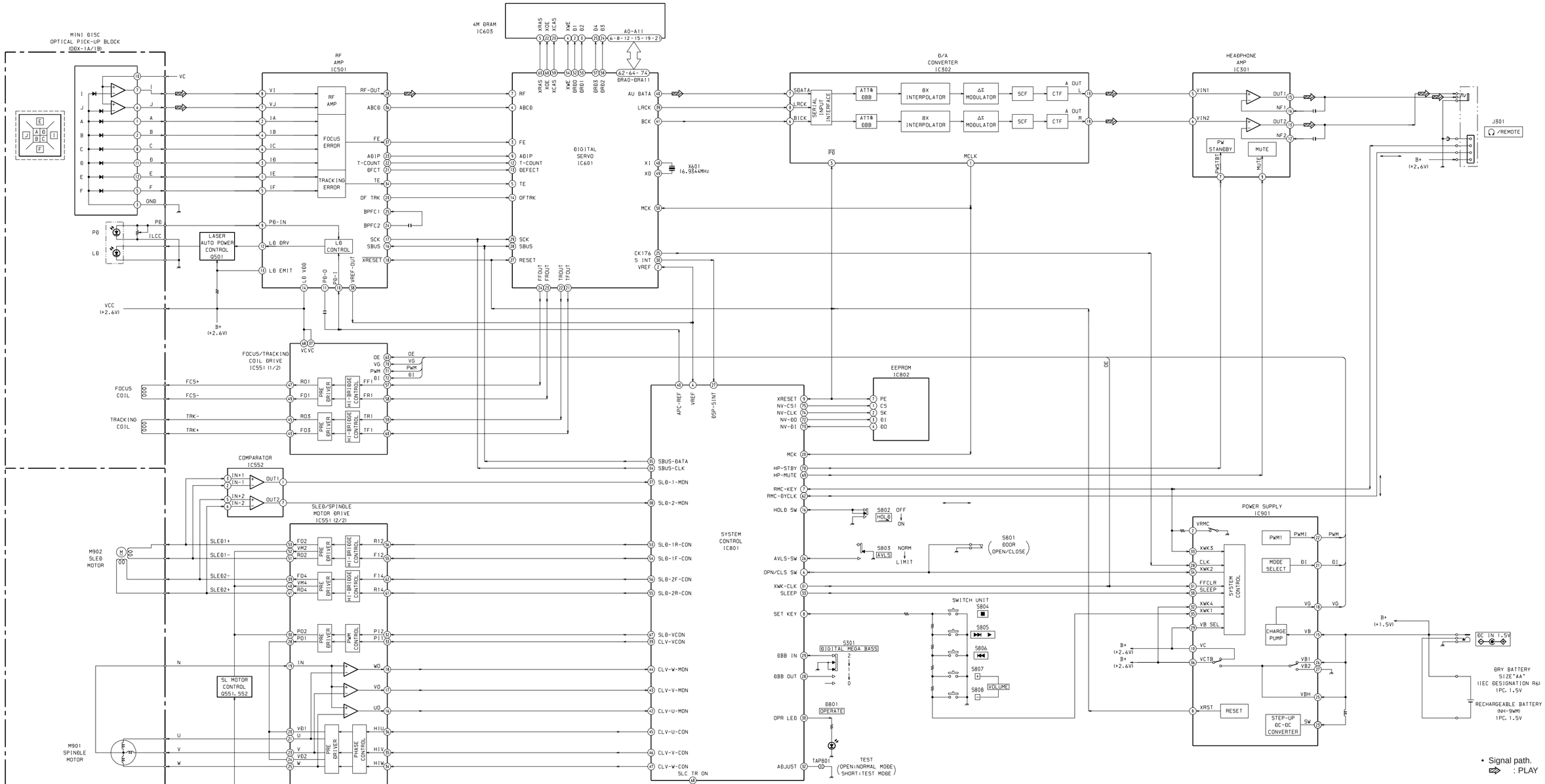
SECTION 6
DIAGRAMS

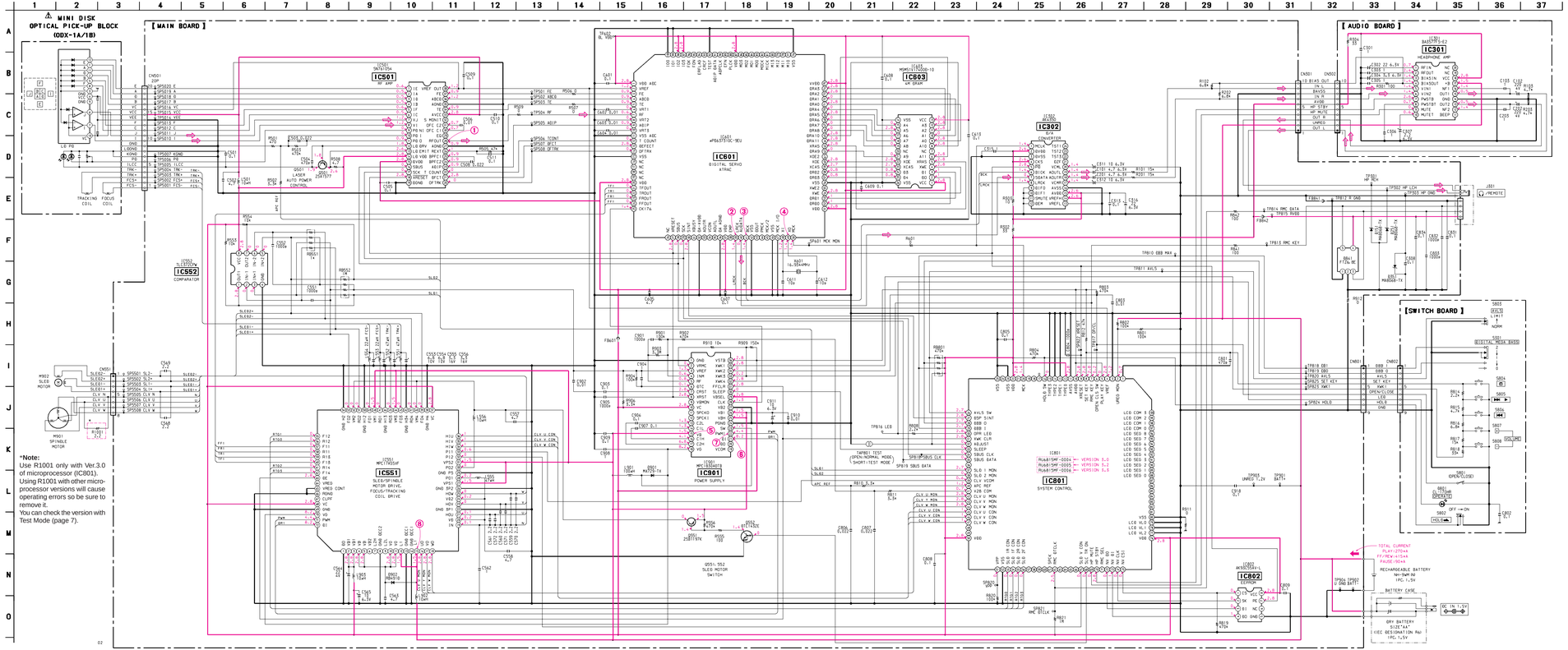
6-1. EXPLANATION OF IC TERMINALS

IC801 RU6815MF-0004 (Ver 3.0), RU6815MF-0005 (Ver 3.2), RU6815MF-0006 (Ver 3.3) (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1		–	Not used (Fixed at “L”).
2	UREG MON	I	Unreg voltage monitor input.
3		–	Not used (Fixed at “L”).
4	VREF	I	Reference voltage for power supply voltage adjustlment.
5	PLAY KEY	I	Set PLAY key input.
6	OPEN/CLS SW	I	OPEN/CLOSE switch input. L : Close
7	RMC KEY	I	Remote commander key input.
8	SET KEY	I	Set key input.
9	XRESET	I	Systen reset input (At reset : “L”).
10	AVDD	–	A/D converter power supply (+2.6V or +2.8V).
11	AVSS	–	A/D converter Ground.
12	TYPE 0	I	Model discrimination terminal (Fixed at “H”).
13	TYPE 1	I	Model discrimination terminal (Fixed at “L”).
14	TYPE 2	I	Model discrimination terminal (Fixed at “L”).
15	TYPE 3	I	Model discrimination terminal (Fixed at “L”).
16	HOLD SW	I	Set HOLD switch input.
17	VREG CON	O	2.5V voltage on/off switch (Sub terminal) (not used).
18		–	Not used (Open).
19		–	Not used (Open).
20	MCK	I	Master clock input.
21		–	Not used (Open).
22	VDD	–	Digital power supply (+2.6V or +2.8V).
23	VSS	–	Digital Ground.
24		–	Not used (Open).
25	VSS	–	Digital Ground.
26	AVLS SW	I	Set AVLS switch input.
27	DSP SINT	I	Interrupt input from DSP.
28	DBB 0	I	DIGITAL MEGA BASS switch input (MID).
29	DBB 1	I	DIGITAL MEGA BASS switch input (MAX).
30	OPR LED	O	LED drive output.
31	XWK CLR	O	Power IC wakeup factor latch clear output and motor driver IC control signal outpt.
32	ADJUST	I	“Normally, Test mode select input (“L” : Test mode)
33	SLEEP	O	Power supply circuit OFF signal output.
34	SBUS CLK	O	SBB serial clock output.
35	SBUS DATA	O	SBB serial data output.
36		–	Not used (Open).
37	SLD 1 MON	I	Sled servo timing signal input.
38	SLD 2 MON	I	Sled servo timing signal input.
39	CLV VCON	O	Spindle servo drive voltage control output.
40	APC REF	O	Laser power control output.
41	V28-CON	O	Power voltage (+2.6V or +2.8V) correction control output.
42	CLV U MON	I	Spindle servo timing signal input.
43	CLV V MON	I	Spindle servo timing signal input.
44	CLV W MON	I	Spindle servo timing signal input.
45	CLV U CON	O	Spindle servo drive signal output.
46	CLV V CON	O	Spindle servo drive signal output.
47	CLV W CON	O	Spindle servo drive signal output.

Pin No.	Pin Name	I/O	Pin Description
48		–	Not used (Open).
49		–	Not used (Open).
50	VDD	–	Digital power supply (+2.6V or +2.8V).
51	VPP	–	Power for on board light.
52	VSS	–	Digital ground.
53	SLD 1R CON	O	Sled motor control signal output.
54	SLD 1F CON	O	Sled motor control signal output.
55	SLD 2R CON	O	Sled motor control signal output.
56	SLD 2F CON	O	Sled motor control signal output.
57		–	Not used (Open).
58		–	Not used (Open).
59		–	Not used (Open).
60		–	Not used (Open).
61	SPCK	O	Serial clock output for Remote control communication. Not used (Open).
62	RMC DTCLK	I/O	Serial data input/output for Remote control communication.
63 – 66		–	Not used (Open).
67	SLD V CON	O	Sled servo outer voltage control output.
68	SLC TR ON	O	Baypass transistor control output for sled drive power supply.
69	HP MUTE	O	Headphone amplifier mute output.
70	HP STBY	O	Headphone amplifier standby output.
71	RMC SEL	O	TSB/SSB selection signal output to remote commander terminal. Not used (Open).
72	NV D0	O	Serial data signal output for NVRAM.
73	NV D1	I	Serial data signal input from NVRAM.
74	NV CLK	O	Serial clock signal output for NVRAM.
75	NV CS1	O	Chip select signal output for NVRAM.
76	VDD	–	Digital power supply (+2.6V or +2.8V).
77 – 79	LCD VL2 – 0	I	LCD drive level power supply (Connected ground).
80	VSS	–	Digital ground.
81 – 87		–	Not used (Open).
88 – 96	LCD SEG0 – 8	–	LCD Segment terminal. Not used (Open).
97 – 100	LCD COM0 – 3	–	LCD common terminal. Not used (Open).


MINI DISC
OPTICAL PICK-UP BLOCK
(BDX-1A/1B)
4M DRAM
IC605
RF
AMP
IC501
D/A
CONVERTER
IC302
HEADPHONE
AMP
IC301
DIGITAL
SERVO
IC601
X601
16.9344MHz
LASER
AUTO POWER
CONTROL
Q501
LD
CONTROL
FOCUS/TRACKING
COIL DRIVE
IC551 (1/2)
FOCUS
COIL
TRACKING
COIL
COMPARATOR
IC552
SLED/SPINDLE
MOTOR DRIVE
IC551 (2/2)
M902
SLED
MOTOR
M901
SPINDLE
MOTOR
SL MOTOR
CONTROL
Q551, 552
SYSTEM
CONTROL
IC801
EEPROM
IC802
POWER SUPPLY
IC901
SWITCH UNIT
S804
S805
S806
S807
S808
VOLUME
S802 OFF
HOLD
ON
S803 NORM
AVLS
LIMIT
S801
DOOR
(OPEN/CLOSE)
S301
DIGITAL MEGA BASS
D801
OPERATE
TEST
(OPEN:NORMAL MODE
SHORT:TEST MODE)
J301
/REMOTE
DRY BATTERY
SIZE"AA"
(IEC DESIGNATION R6)
1PC. 1.5V
RECHARGEABLE BATTERY
(NH-9WM)
1PC. 1.5V
DC IN 1.5V
B+
(+2.6V)
B+
(+1.5V)
VCC
(+2.6V)
• Signal path.
: PLAY



– 21 –

– 22 –

– 23 –

– 24 –

● Waveform.

① IC501 ㉘ VOLT/DIV : 200 mV AC, TIME/DIV : 5 μsec — 743 mVp-p

② IC601 ㉙ VOLT/DIV : 1 V AC, TIME/DIV : 10 μsec — 2.7 Vp-p, 23 μsec

③ IC601 ㊹ VOLT/DIV : 500 mV AC, TIME/DIV : 200 nsec — 2.6 Vp-p, 482 nsec

④ IC601 ㊽ VOLT/DIV : 500m V AC, TIME/DIV : 20 nsec — 2.0 Vp-p, 16.9344 MHz

⑤ IC901 ⑮ VB VOLT/DIV : 0.1 V AC, TIME/DIV : 2 μsec — 269 mVp-p, 5.76 μsec

⑥ IC901 ㉑ DI VOLT/DIV : 20 mV AC, TIME/DIV : 2 μsec — 63 mVp-p, 5.78 μsec

⑦ IC901 ㉒ PWMI VOLT/DIV : 2 V AC, TIME/DIV : 2 μsec — 7.9 Vp-p, 5.56 μsec

⑧ IC551 ⑮ L1 VOLT/DIV : 1 V AC, TIME/DIV : 2 μsec — 3.2 Vp-p, 5.68 μsec

Note:

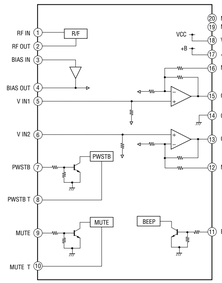
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

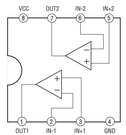
- ▬▬ : B+ Line.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
- Voltages and currents are taken with a VOM (Input impedance 10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : PLAY

● IC Block Diagrams

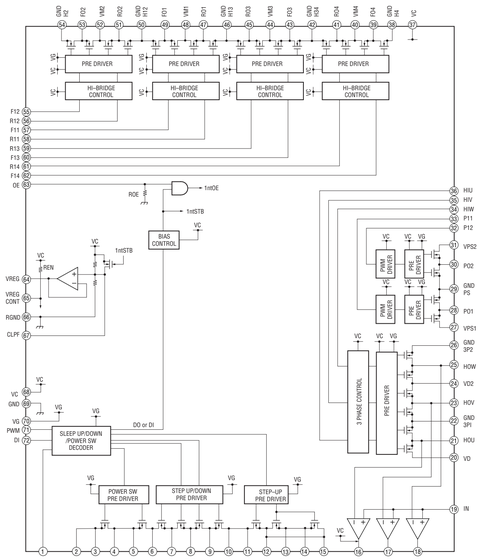
IC301 BA3577FS-E2



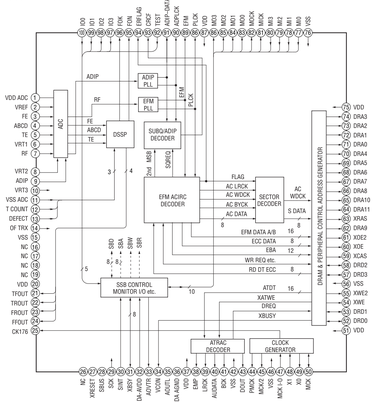
IC552 TLC372CPW-E20



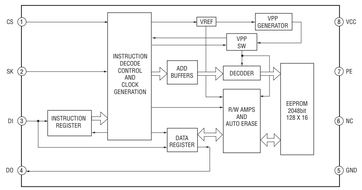
IC551 MPC17A55FTA



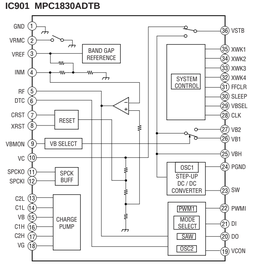
IC601 uPD63731GC-9EU



IC802 AK93C55AV-L



IC901 MPC1830ADTB



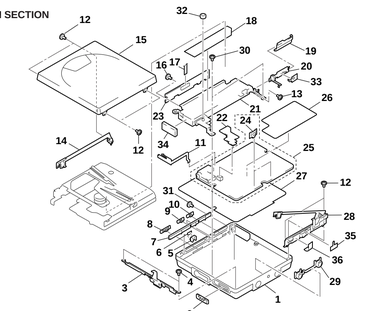
SECTION 7
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ••• (RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
  HK : Hong Kong

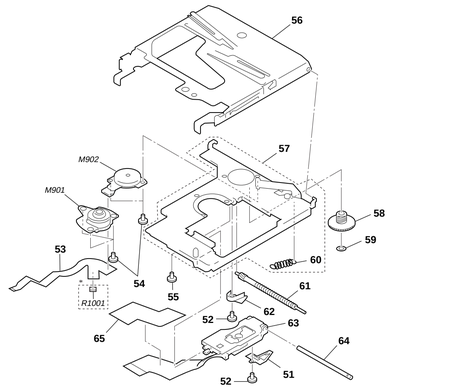
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	4-212-867-01	PANEL, BOTTOM (GOLD)	
1	4-212-867-11	PANEL, BOTTOM (BLUE) (HK)	
2	4-212-872-01	KNOB, OPEN (GOLD)	
2	4-212-872-11	KNOB, OPEN (BLUE) (HK)	
3	X-4950-410-1	SLIDER ASSY, OPEN	
4	4-963-883-61	SCREW (M1.4), PRECISION PAN	
5	4-212-884-01	WINDOW (LED)	
6	4-212-885-01	SHEET (LED), ADHESIVE	
7	4-212-868-01	BUTTON, CONTROL (GOLD)	
7	4-212-868-11	BUTTON, CONTROL (BLUE) (HK)	
8	4-212-883-01	KNOB (HOLD) (GOLD)	
8	4-212-883-11	KNOB (HOLD) (BLUE) (HK)	
9	4-212-882-01	KNOB (MB) (GOLD)	
9	4-212-882-11	KNOB (MB) (BLUE) (HK)	
10	4-213-653-01	KNOB (AVLS) (GOLD)	
10	4-213-653-11	KNOB (AVLS) (BLUE) (HK)	
11	4-212-895-01	TERMINAL BOARD (MINUS)	
12	4-963-883-21	SCREW (M1.4), PRECISION PAN (GOLD)	
12	4-963-883-31	SCREW(M1.4), PRECISION PAN (BLUE) (HK)	
13	4-963-883-21	SCREW (M1.4), PRECISION PAN	
14	X-4950-413-1	PLATE (L) ASSY, FULCRUM	
15	X-4950-578-2	UPPER PANEL ASSY (GOLD)	
15	X-4950-579-2	UPPER PANEL ASSY (BLUE) (HK)	
16	3-375-114-61	SCREW	
17	1-670-708-11	SWITCH FLEXIBLE BOARD	
18	4-213-092-01	LABEL, CAUTION	
19	4-212-873-01	LID, BATTERY CASE (GOLD)	
19	4-212-873-11	LID, BATTERY CASE (BLUE) (HK)	
20	X-4950-411-1	TERMINAL (PLUS) ASSY, BATTERY	
21	4-212-886-01	CASE, BATTERY	
24	4-212-901-01	TERMINAL	
25	A-3323-057-A	MAIN BOARD, COMPLETE	
26	4-212-871-01	SHEET, BLIND	
27	4-212-870-01	SHEET, INSULATING	
28	X-4950-419-1	PLATE (R) ASSY, FULCRUM	
29	4-212-869-01	ESCUTCHEON	
30	3-365-630-02	SCREW (M1.4) STEP	
31	3-365-630-21	SCREW (M1.4) STEP (GOLD)	
31	3-365-630-31	SCREW (M1.4) STEP (BLUE) (HK)	
32	4-212-891-01	CUSHION	
33	4-214-628-01	SPACER (PLUS TERMINAL)	
34	4-214-158-01	DAMPER (-)	
35	4-214-183-01	SHEET (G), CONDUCTIVE	
36	4-214-627-01	SPACER (BATTERY TERMINAL)	

7-2. MECHANISM DECK SECTION (MT-MZE55-150)



***Note:**
Use R1001 only with Ver.3.0 of microprocessor (IC801).
Using R1001 with other microprocessor versions will cause operating errors so be sure to remove it.
You can check the version with Test Mode (page 7).

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	4-982-561-11	SPRING, RACK	
52	4-963-883-61	SCREW (M1.4), PRECISION PAN	
53	1-670-707-11	CLV FLEXIBLE BOARD	
⚠63	X-4949-164-1	OPTICAL PICK-UP BLOCK ASSY	
64	4-214-478-01	SHAFT (MAIN)	
65	4-214-207-01	SHEET (DP)	
M901	8-835-594-02	MOTOR, DC (SPINDLE)	
M902	1-698-764-21	MOTOR, SLED (SLED) (INCLUDING GEAR)	
R1001	1-216-789-11	METAL CHIP 2.2 5% 1/16W	

SECTION 8
ELECTRICAL PARTS LIST

AUDIO **MAIN**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  FR : French
  HK : Hong Kong

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-670-711-11	AUDIO BOARD			
		**********			
		< CAPACITOR >			
C102	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C103	1-115-156-11	CERAMIC CHIP	1uF	10V	
C202	1-125-899-11	TANTAL. CHIP	220uF	20%	4V
C203	1-115-156-11	CERAMIC CHIP	1uF	10V	
C301	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C302	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C303	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C304	1-127-578-91	TANTAL. CHIP	3.3uF	20%	6.3V
C305	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C306	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C307	1-113-600-11	TANTAL. CHIP	2.2uF	20%	6.3V
		< CONNECTOR >			
* CN302	1-750-281-31	CONNECTOR, BOARD TO BOARD 10P			
		< IC >			
IC301	8-759-431-56	IC BA3577FS-E2			
		< RESISTOR >			
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R301	1-216-809-11	METAL CHIP	100	5%	1/16W
R304	1-216-803-11	METAL CHIP	33	5%	1/16W
**********					
	A-3323-057-A	MAIN BOARD, COMPLETE			
		**********			
	4-212-901-01	TERMINAL			
		< CAPACITOR >			
C101	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C201	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C308	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C311	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C312	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C313	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C315	1-115-156-11	CERAMIC CHIP	1uF		10V
C316	1-127-574-91	TANTAL. CHIP	22uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C501	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C502	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C503	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C504	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C505	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C509	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C510	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C551	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C552	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C553	1-135-238-21	TANTAL. CHIP	6.8uF	20%	10V
C554	1-135-238-21	TANTAL. CHIP	6.8uF	20%	10V
C555	1-107-765-11	TANTAL. CHIP	3.3uF	20%	16V
C556	1-107-765-11	TANTAL. CHIP	3.3uF	20%	16V
C557	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C558	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C559	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C560	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C561	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C562	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C563	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C564	1-117-232-11	TANTALUM	22uF	20%	4V
C565	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C568	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C569	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C570	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C571	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C572	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C601	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C603	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C605	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C607	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C611	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C612	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C613	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C801	1-162-962-11	CERAMIC CHIP	470PF	10%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C805	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C806	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C807	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C808	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C809	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C831	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C832	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C833	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C834	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C903	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C904	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C905	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C906	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C907	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C908	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C909	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C910	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C911	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C918	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN301	1-750-316-31	CONNECTOR, BOARD TO BOARD 10P			
* CN501	1-778-168-11	CONNECTOR, FFC/FPC (ZIF) 20P			
* CN551	1-785-218-21	CONNECTOR, FPC (ZIF) 8P			
* CN801	1-785-219-21	CONNECTOR, FPC (ZIF) 9P			
		< DIODE >			
D151	8-719-017-58	DIODE MA8068			
D251	8-719-017-58	DIODE MA8068			
D351	8-719-017-58	DIODE MA8068			
D841	8-719-066-17	DIODE FTZ6.8E-T148			
D901	8-719-420-51	DIODE MA729			
D902	8-719-066-16	DIODE RB491D-T146			
		< FERRITE BEAD >			
FB601	1-414-227-11	INDUCTOR, FERRITE BEAD			
FB841	1-414-228-11	INDUCTOR, FERRITE BEAD			
FB842	1-414-228-11	INDUCTOR, FERRITE BEAD			
		< IC >			
IC302	8-759-541-32	IC AK4350-VF-E1			
IC501	8-759-538-56	IC SN761054			
IC551	8-759-390-25	IC MPC17A55FTA			
IC552	8-759-358-40	IC TLC372CPW-E20			
IC601	8-759-538-55	IC uPD63731GC-9EU			
IC603	8-759-538-44	IC MSM51V17400D-10TK-FS			
IC801	8-759-564-20	IC RU6815MF-0004 (VERSION 3.0)			
IC801	8-759-573-84	IC RU6815MF-0005 (VERSION 3.2)			
IC801	8-759-580-35	IC RU6815MF-0006 (VERSION 3.3)			
IC802	8-759-449-23	IC AK93C55AV-L			
IC901	8-759-538-57	IC MPC1830ADTB			

Ref. No.	Part No.	Description			Remark
		< JACK >			
J301	1-779-867-61	JACK (🎧/REMOTE)			
		< COIL >			
L501	1-412-006-31	INDUCTOR CHIP	10uH		
L551	1-412-031-11	INDUCTOR CHIP	47uH		
L552	1-412-031-11	INDUCTOR CHIP	47uH		
L553	1-412-030-11	INDUCTOR CHIP	22uH		
L554	1-412-030-11	INDUCTOR CHIP	22uH		
L555	1-412-031-11	INDUCTOR CHIP	47uH		
L556	1-414-410-21	INDUCTOR	10uH		
L901	1-412-032-11	INDUCTOR CHIP	100uH		
L902	1-416-668-11	COIL, CHOKE	10uH		
L903	1-414-410-21	INDUCTOR	10uH		
		< TRANSISTOR >			
Q501	8-729-922-10	TRANSISTOR	2SA1577-QR		
Q551	8-729-904-87	TRANSISTOR	2SB1197K-R		
Q552	8-729-929-11	TRANSISTOR	DTC143ZE-TL		
		< RESISTOR >			
R101	1-216-835-11	METAL CHIP	15K	5%	1/16W
R102	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R201	1-216-835-11	METAL CHIP	15K	5%	1/16W
R202	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R302	1-216-803-11	METAL CHIP	33	5%	1/16W
R303	1-216-797-11	METAL CHIP	10	5%	1/16W
R501	1-216-817-11	METAL CHIP	470	5%	1/16W
R502	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R503	1-216-853-11	METAL CHIP	470K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-864-11	METAL CHIP	0	5%	1/16W
R507	1-216-864-11	METAL CHIP	0	5%	1/16W
R508	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R509	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-216-833-11	METAL CHIP	10K	5%	1/16W
R554	1-216-833-11	METAL CHIP	10K	5%	1/16W
R555	1-216-809-11	METAL CHIP	100	5%	1/16W
R556	1-216-853-11	METAL CHIP	470K	5%	1/16W
R601	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-845-11	METAL CHIP	100K	5%	1/16W
R802	1-216-845-11	METAL CHIP	100K	5%	1/16W
R803	1-216-853-11	METAL CHIP	470K	5%	1/16W
R804	1-216-853-11	METAL CHIP	470K	5%	1/16W
R808	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R810	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R811	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R812	1-216-841-11	METAL CHIP	47K	5%	1/16W
R819	1-216-853-11	METAL CHIP	470K	5%	1/16W
R820	1-216-845-11	METAL CHIP	100K	5%	1/16W
R821	1-216-857-11	METAL CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description			Remark
R841	1-216-809-11	METAL CHIP	100	5%	1/16W
R842	1-216-809-11	METAL CHIP	100	5%	1/16W
R901	1-216-845-11	METAL CHIP	100K	5%	1/16W
R902	1-216-853-11	METAL CHIP	470K	5%	1/16W
R903	1-216-863-11	RES,CHIP	3.3M	5%	1/16W
R904	1-216-845-11	METAL CHIP	100K	5%	1/16W
R906	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R909	1-216-847-11	METAL CHIP	150K	5%	1/16W
R910	1-218-871-11	RES,CHIP	10K	0.50%	1/16W
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R912	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB551	1-233-961-11	RES, NETWORK (CHIP TYPE) 1K			
RB552	1-233-979-11	RES, NETWORK (CHIP TYPE) 1M			
RB801	1-233-977-11	RES, NETWORK (CHIP TYPE) 470K			
		< VIBRATOR >			
X601	1-781-038-21	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-670-710-11	SWITCH BOARD **********			
		< CAPACITOR >			
C802	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN802	1-785-217-21	CONNECTOR, FPC (ZIF) 9P			
		< DIODE >			
D801	8-719-051-01	LED CL-170HR-CD-T (OPERATE)			
		< RESISTOR >			
R814	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R815	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R816	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R817	1-216-835-11	METAL CHIP	15K	5%	1/16W
R818	1-216-839-11	METAL CHIP	33K	5%	1/16W
		< SWITCH >			
S301	1-762-079-11	SWITCH, SLIDE (DIGITAL MEGA BASS)			
S801	1-771-483-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)			
S802	1-762-078-11	SWITCH, SLIDE (HOLD ▬)			
S803	1-762-078-11	SWITCH, SLIDE (AVLS)			
S804	1-771-138-21	SWITCH, KEY BOARD (■)			
S805	1-771-138-21	SWITCH, KEY BOARD (▶▶I▶)			
S806	1-771-138-21	SWITCH, KEY BOARD (I◀◀)			
S807	1-771-138-21	SWITCH, KEY BOARD (VOLUME +)			
S808	1-771-138-21	SWITCH, KEY BOARD (VOLUME -)			
**********					

Ref. No.	Part No.	Description			Remark
		MISCELLANEOUS **********			
17	1-670-708-11	SWITCH FLEXIBLE BOARD			
53	1-670-707-11	CLV FLEXIBLE BOARD			
⚠63	X-4949-164-1	OPTICAL PICK-UP BLOCK ASSY			
M901	8-835-594-02	MOTOR, DC (SPINDLE)			
M902	1-698-764-21	MOTOR, SLED (SLED) (INCLUDING GEAR)			
R1001	1-216-789-11	METAL CHIP	2.2	5%	1/16W

•Note:
Use R1001 only with Ver.3.0 of microprocessor (IC801).
Using R1001 with other microprocessor versions will cause operating errors so be sure to remove it.
You can check the version with Test Mode (page 7).

****

		ACCESSORIES & PACKING MATERIALS **********
	1-475-831-22	REMOTE CONTROL UNIT (RM-MZE55) (GOLD)
	1-475-831-52	REMOTE CONTROL UNIT (RM-MZE55) (BLUE) (HK)
⚠	1-528-580-21	BATTERY CHARGER (BC-7HT) (Tourist)
	1-528-743-11	BATTERY, NICKEL HYDROGEN
⚠	1-528-865-11	BATTERY, CHARGER (BC-9HY2) (AEP, FR)
⚠	1-528-866-11	BATTERY, CHARGER (BC-9HP2) (HK, UK)
⚠	1-528-891-12	BATTERY, CHARGER (BC-9HU2) (US)
	1-528-918-11	BATTERY CASE
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (Tourist)
	3-008-521-01	CASE, BATTERY CHARGE
	3-865-053-11	MANUAL, INSTRUCTION (SPANISH,CHINESE) (AEP, Tourist)
	3-865-053-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (US, AEP, FR, Tourist)
	3-865-053-31	MANUAL, INSTRUCTION (GERMAN, DUTCH) (AEP, FR)
	3-865-053-41	MANUAL, INSTRUCTION (ITALIAN, PORTUGUESE) (AEP)
	3-865-053-51	MANUAL, INSTRUCTION (SWEDISH, FINNISH) (AEP)
	3-865-053-61	MANUAL, INSTRUCTION (ENGLISH,CHINESE) (UK, HK)
	3-865-053-71	MANUAL, INSTRUCTION (JAPANESE, KOREAN) (Tourist)
	3-865-053-81	MANUAL, INSTRUCTION (RUSSIAN)(AEP)
	4-972-888-01	CASE, CARRYING
	8-953-218-90	HEADPHONE MDR-E838SP//K SET (HK, Tourist)
	8-953-278-90	HEADPHONE MDR-A34SP SET (US)
	8-953-304-90	RECEIVER MDR-E805SP SET (AEP, UK, FR)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-924-958-12

Sony Corporation
Personal A&V Products Company

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